SEXUAL ASSAULT PREVENTION: A RANDOMIZED CONTROLLED TRIAL OF A MILITARY INTERVENTION

by

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ABSTRACT

This randomized controlled trial examined the efficacy of the United States Air Force (USAF) sexual assault prevention program (SAPP) compared to that same program with an additional motivational interviewing (MI) component designed to increase participants' motivation to change. Participants were college students, and the study took place on a university campus, not on a military base. Fifty-one participants were randomly assigned to either the standard condition (*n*=25) or the PLUS condition (*n*=26). Primary outcome measures included the Bystander Efficacy Scale (BES), the Bystander Attitudes Scale Revised (BAS-R), and the Illinois Rape Myth Acceptance Scale (IRMAS). Participants assigned to the standard condition showed minor improvements in some outcome areas; however, none was statistically significant. Participants assigned to the MI enhanced condition showed statistically significant increases in two key measures: willingness to intervene as a bystander and overall increases in prosocial bystander attitudes regarding sexual assault. This study indicates that the standard USAF SAPP program may not be effective in combatting sexual assault. More importantly, results indicate that the addition of a MI component may hold promise for assisting in the goal of reducing sexual assault in the USAF. Future studies might be conducted with active duty participants on a military installation.

Dedicated to the hundreds of thousands of military sexual assault survivors. May this study shed some light on how to eradicate this epidemic.

“The difference between what we do and what we are capable of doing would suffice to solve most of the world's problems.”

— Mahatma Gandhi

TABLE OF CONTENTS

LIST OF TABLES

Tables

LIST OF FIGURES

Figure

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CHAPTER 1

INTRODUCTION

Background on Sexual Assault as a Social Problem

Sexual violence is currently a prevalent problem in American society, as nearly 25% of women report they have been the victim of an attempted or a completed rape in their lifetime (Fisher, Cullen, & Turner, 2000). The problem of sexual assault in the U.S. military has recently been elevated to a key critical concern, potentially affecting the mission of the U.S. Armed Forces.

Sexual assault in the military is prevalent and problematic on several levels (Turchik & Wilson, 2010). From an individual standpoint, sexual assault is linked to untoward outcomes for survivors, such as problems with physical and mental health issues (U.S. Department of Defense [DoD], 2009). Mental health issues due to sexual assault are well documented. Findings reveal that victims of sexual assault have high rates of anxiety and depression (Boyd, Bradshaw, & Robinson, 2013). Additional maladaptive issues include substance abuse and dependence, as well as posttraumatic disorder symptoms (Elliott, Mok, & Briere, 2004). Victims of military sexual assault also face additional trauma by virtue of having to work in close proximity to an attacker in many cases and may face extreme forms of retribution if the assaults are reported (Bell & Reardon, 2011).

Sexual assault degrades a sense of safety and unit cohesion within the

organization, which can undermine military activities, including recruitment of new service members, training, and more importantly, it can have serious repercussions for operational missions service members are required to accomplish (DoD, 2009). If military members do not feel protected from their own ranks, they will likely have difficulty developing and executing the expertise required to function effectively during times of conflict or war (DoD, 2009). Clearly, the threat of sexual assault within the military poses significant problems to not only the individuals who have suffered an assault, but also to the organization as a whole. To fully explore this issue, some key definitions are required.

Department of Defense Sexual Assault Definition

The DoD definition of sexual assault is intentional sexual contact characterized by the use of force, threats, intimidation, or abuse of authority or when the victim does not or cannot consent. As used in this strategy, the term includes a broad category of sexual offenses consisting of the following specific Uniform Code of Military Justice (UCMJ) offenses: rape, sexual assault, aggravated sexual contact, abusive sexual contact, forcible sodomy (forced oral or anal sex), or attempts to commit these offenses (DoD, 2014). The DoD adopted several elements of the Center for Disease Control's (CDC) definition of sexual violence (SV), which basically states that SV is any sexual act that is perpetrated against someone's will. This includes a variety of offenses, including a completed nonconsensual sex act (i.e., rape), an attempted nonconsensual sex act, abusive sexual contact (i.e., unwanted touching), and noncontact sexual abuse such as threats of sexual violence and verbal sexual harassment (CDC, 2012). The key point is that all of these circumstances pertain to an unwilling or nonconsensual activity of a sexual nature**.** Based

on the adoption of much of the CDC's definition of sexual assault, it is no wonder the DoD has gone a step further to state they are currently embracing the CDC's overarching public health framework and the Social Ecological Model (SEM) for their own sexual assault prevention programs.

Key Statistics on Prevalence

When looking at prevalence rates of both the military, as well as the civilian populations, alarming statistics come to the fore. Sexual assault within the military is, unfortunately, far too prevalent and far more pervasive than rates found in the civilian sector. Turchik and Wilson (2010) conducted a comprehensive review of sexual assault victimization in the U.S. military and provided estimates suggesting 9% to 33% of servicewomen and 1% to 12% of servicemen have experienced an attempted or completed rape during their service. These numbers are alarming, considering that in 2005, the DoD launched the Sexual Assault Prevention and Response Office (SAPRO), a department level office headed by a two star general, which holds central responsibility for combating sexual assault and conducting training across all military branches (Holland, Rabelo, & Cortina, 2014).

The training conducted under the purview of SAPRO has been grossly under-evaluated by outside researchers and, according to published research, has not undergone rigorous internal DoD or outside, contracted evaluations to determine program efficacy (Turchik & Wilson, 2010). What, if any, rigorous evaluations have been conducted since program implementation began back in 2005 is largely unknown.

Not only are evaluations of current military prevention programs lacking, but, based on a review of a 2010 DoD workplace gender relations study, participants'

judgments of the effectiveness of this crucial prevention training varied widely across military branches (Army, Navy, Air Force, and Marines), as well as across rank, gender, and sexual assault history (Holland et al., 2014). While the official DoD 2010 annual report on this issue stated that most members considered the training to be effective, independent review reveals doubt on that very claim (Holland et al., 2014). Further, men have reported sexual harassment rates ranging from 36% to 74% during their time in the military (Bastian, Lancaster, & Reyst, 1996). These figures are alarmingly high when compared to the estimated victimization rates in the civilian sector, which are reported to be 1 in 5 (20%) for women and 1 in 71 (.01%) for men (DeGue Simon et al., 2012).

While these numbers are high, they may actually be a significant underestimate of the true prevalence of the problem, given the state of under-reporting that is common among sexual assault survivors (Mulhall, 2009). The DoD (2014) stated that there were 5,061 reported cases of sexual assaults during fiscal year 2013, which represents a 50% increase in the level of sexual assaults reported in the previous year. Although this increased reporting may represent an important shift within military culture, whereby members feel more confident these reports will be taken seriously by their chain of command, another possibility is that this crime is increasing in frequency. Of course, increased reporting is not the end goal of prevention efforts; rather, the prevention of sexual assault is the desired outcome for both military and civilians alike; therefore, a closer look at what the military leadership is doing regarding sexual assault is in order.

Department of Defense Response to Sexual Assault

The DoD has taken an increased interest in preventing sexual assault in recent years. For example, the DoD's (2014) research and reporting program (SAPRO) cites the

important role of deterrence through prosecution of identifiable perpetrators, as well as increased outreach to sexual assault survivors. These efforts have merit and are an ethical mandate for all branches of the military, but neither measure addresses prevention of sexual assault as a primary goal or broad-scale engagement of the military community as collaborators in prevention efforts.

As recently as 2014, the DoD has stated they are embracing the CDC's public health model for sexual assault prevention; however, many key elements of this model remain absent from current military prevention programming (Gedney, Wood, Lundahl, & Butters, 2015). Many of the key principles of prevention that are the fundamental building blocks for effective prevention programs, including components at the individual, relationship, community, and societal levels, are nonexistent in current military prevention programs. In fact, roll out of the U.S. Air Force's (USAF) 2015 prevention program may have gone several steps backwards. For instance, the 2015 training now reverts back to employing a 90-minute mass briefing in a local base theater for upwards of 300 personnel at a time, with no opportunity for interactive or small group sessions, necessary components of prevention principles (Nation et al., 2003) that were evident in the USAF's 2014 program (Gedney et al., 2015).

Military Prevention Approach

To better understand how the military has approached the issue of sexual assault prevention, a comprehensive literature review was conducted and will be discussed in depth further in this paper. However, a brief introduction to this literature will facilitate the more in-depth review in the subsequent section. The assumption that any military prevention efforts conducted are helpful may be wrong. For example, in a study of a male

college-based rape prevention program, researchers used audiotapes of both male and female victims describing a sexual assault (Berg, Lonsway, & Fitzgerald, 1999). The analysis revealed that, while neither audiotape increased rape-supportive attitudes, the subjects who listened to the female victim endorsed more rape-supportive behaviors (i.e., encouraging females to consume more alcohol with the intention of having sex). This study illustrates the potentially harmful effect of well-intentioned prevention components that may actually increase risk of perpetration. As a result of this study, many sexual assault and domestic violence prevention programs now use gender-matched audio and videotapes in their curriculum (Berg et al., 1999). This information is particularly concerning given that some military prevention programs, specifically the 2014 USAF program, have delivered content that included mock rape videos—a feature that might be potentially iatrogenic. Rather than include elements of prevention training that may not be helpful, and indeed could be harmful, turning to prevention best practices is warranted.

Emerging Sexual Assault Prevention Best Practices

Best practices for sexual assault prevention programs are beginning to emerge in the literature. A recent review of the literature suggests prevention programs should include sociocultural relevance, effective education on the facts and myths surrounding sexual assault, methods to promote empowerment of potential victims, information on why men sexually assault, what factors increase the likelihood of a sexual assault, and assertiveness skills to help prevent sexual assault (Anderson & Whiston, 2005; Banyard, Moynihan, & Plante, 2007; Brecklin & Forde, 2001; Yeater & O'Donohue, 1999).

Bystander education has garnered considerable recent attention, with the military adopting some of its elements (Katz & Moore, 2013). This approach to sexual assault

prevention has been proposed as a helpful solution to the many challenges inherent in sexual assault prevention programs. For instance, Banyard, Plante and Moynihan (2005) purport the following benefits of bystander prevention programs: (a) fosters social change by changing norms regarding sexual assault, (b) broadens the responsibility to the larger community rather than smaller subsets of affected groups and individuals (e.g., victims and perpetrators), and (c) reduces defensiveness among participants by engaging them as collaborators toward a solution.

The military, in particular, may benefit from a bystander emphasis, since military personnel often function in close proximity during in-garrison training, peacetime training environments, and combat settings. To date, bystander approaches for the prevention of sexual assault have garnered promising empirical support. Specifically, several investigators (Banyard et al., 2007; Foubert, Godin, & Tatum, 2010) reported that bystander approaches help change the culture and promote men, in general, as potential bystanders "who can prevent a rape from occurring" (Foubert et al., 2010, p. 2239). Meta-analysis of bystander approaches also provides empirical support across a wide array of applications (Anderson & Whiston, 2005; Katz & Moore, 2013).

Military Prevention Efficacy Data Lacking

Since evaluations of military prevention efforts remain all but absent in the current literature, there is really no way of knowing if the programs are effective in achieving goals of reducing sexual assault among the ranks. A recent review of the 2014 USAF program shows there is an increasing emphasis on bystander interventions. This emphasis has gained traction within the campus community, with an aim to change the climate of tight-knit groups, so communities begin to experience a call to stop sexual

violence rather than simply suggesting potential victims and/or potential perpetrators change behaviors on an individual level (Gedney et al., 2015; Potter & Stapleton, 2012).

While this initial look at military program content is a good first step towards evaluating military prevention efforts, there is much work to be done to fully evaluate DoD sexual assault prevention programs with members of the armed forces as study participants. There are, however, some prevention interventions that are worth reviewing that have been labeled as promising, as a result of a recent systematic review of prevention interventions (DeGue et al., 2014), which will be discussed in more detail later in the paper; however, a comprehensive review of these practices is beyond the scope of this study. These promising programs are Safe Dates, Shifting Boundaries, and 1994 U.S. Violence Against Women Act (DeGue et al., 2014).

Using a rigorous evaluation design of over 140 programs, DeGue et al. (2014) found that despite decades of sexual assault prevention interventions, only three programs showed real promise at creating significant and lasting effects on sexually violent behaviors. The three programs are Safe Dates, Shifting Boundaries, and funding associated with elements of the 1994 U.S. Violence against Women Act. Moreover, despite decades of research on sexual assault and associated prevention efforts, there remains a clear lack of theory or theoretical underpinnings referenced or even eluded to in the vast majority of sexual assault prevention studies and intervention documentation. Upon reviewing over 73 distinct sexual assault prevention interventions, ranging from individual to school-based to community settings and from juvenile through adult populations, the lack of theory guiding programming is more than alarming (DeGue, Simon et al., 2012).

Purpose of the Study

After a brief review of the social problem of sexual assault, both in the military and within the civilian population, and reiterating the fact that there has not yet been a formal evaluation of a military sexual assault prevention program to determine its efficacy, the need for the present study is evident. This study investigated and compared a current military sexual assault prevention program with one additional component to see what the effects were on three primary outcome areas. Specifically, the purpose of this dissertation was to investigate whether the current training resulted in increased willingness to intervene as a bystander, whether bystander attitudes improved regarding sexual assault situations, and if commonly held myths regarding rape changed in a positive or prosocial manner. The specific research questions and hypotheses for this study were:

RQ1a: Is there a statistically significant difference between pretest and posttest Bystander Efficacy Scale (BES) scores among those in the standard treatment group?
$H_0$1a: There is no significant difference in BES pretest and posttest scores in the standard treatment group.

RQ1b: Is there a statistically significant difference between pretest and posttest BES scores among those in the PLUS treatment group?
$H_0$1b: There is no significant difference in BES pretest and posttest scores in the PLUS treatment group.

RQ2a: Is there a statistically significant difference between pretest and posttest Bystander Attitude Scale Revised (BAS-R) scores among those in the standard treatment group?

$H_0$2a: There is no significant difference in BAS-R pretest and posttest scores in the standard treatment group.

RQ2b: Is there a statistically significant difference between pretest and posttest BAS-R scores among those in the PLUS treatment group?

$H_0$2b: There is no significant difference in BAS-R pretest and posttest scores in the PLUS treatment group.

RQ3: Is there a statistically significant difference in the change in BAS-R scores from pretest to posttest between the standard and PLUS treatment groups?

$H_0$3: There is no significant change in BAS-R scores from pretest to posttest scores between the standard and PLUS treatment groups.

RQ4a: Is there a statistically significant difference in pretest and posttest Illinois Rape Myth Acceptance Scale (IRMAS) scores among those in the standard treatment group?

$H_0$4a: There is no significant difference in pretest and posttest IRMAS scores within the standard treatment group.

RQ4b: Is there a statistically significant difference in pretest and posttest IRMAS scores among those in the PLUS treatment group?

$H_0$4b: There is no significant difference in pretest and posttest IRMAS scores within the PLUS treatment group.

Motivation to Intervene as a Bystander to a Sexual Assault Situation

The study also sought to determine if participants' motivation to intervene to prevent a sexual assault increased through utilizing strategies associated with

motivational interviewing. Motivational interviewing (MI) has demonstrated an ability to promote participants' motivation to adopt change beliefs and to change behaviors (Miller & Rollnick, 2013). The mechanism by which motivation is believed to be strengthened is through participants actively discussing the benefits and drawbacks of a certain behavior. The more participants argue for change, the greater the likelihood they will identify with such beliefs.

For the present study, half of the participants in the PLUS group received additional activity, wherein they reviewed the benefits of intervening as a bystander to a sexual assault while also discussing the drawbacks of not acting in such a manner. Theory and evidence suggest this should work to promote the overall goals of the current iteration of the USAF Sexual Assault Prevention Program (SAPP), which centers on the bystander as an active element in widespread prevention of sexual assault. This was done in two ways: first, participants completed a questionnaire, which directed participants to consider the advantages of actively intervening in situations that could involve a sexual assault (and the inverse); and second, participants participated in small groups to share the ideas they listed to further internalize the training content.

CHAPTER 2

LITERATURE REVIEW

The introduction laid out the compelling social issue of sexual assault, as well as key definitions found in the literature regarding what constitutes sexual assault and key theories attempting to delineate the causes of sexual assault. The literature review section covers the current state of the research regarding this troubling issue, as well as key findings on sexual assault in both the civilian and military populations. This section concludes by examining several promising programs for prevention found in the literature. Although most of the studies on sexual assault prevention utilize a campus setting, a few studies discussed the state of military sexual assault research. Wherever possible, I focused on the state of the military literature, since that is the focus of this study; however, due to lack of research in this area, the bulk of the literature will reveal data found in the civilian sector, most notably within the college setting.

To begin, a review of the research used to derive prevalence rates of sexual assault is presented. This includes both civilian and military prevalence rates examined by gender, as well as a critical examination of the research related to the psychological factors associated with sexual assault, both from a civilian and a military perspective. The research highlights studies that attempt to explain why military prevalence of sexual abuse tends to be higher than the civilian population. Research studies targeting the sociodemographic factors, youth and adolescent sexual abuse, and the culture of violence

are explored and critiqued. Lastly, a critical analysis of research relating to sexual assault prevention programs is presented, specifically as it relates to measures of effectiveness, and concludes with a brief summary of these critical analyses.

Prevalence Rates

Prevalence rates of sexual assault vary widely from study to study. This is primarily due to the inconsistencies in the methodology, sample, definition of sexual assault, and the survey questions used to measure sexual assault (Bostock & Daley, 2007). The discrepancies exist for prevalence rates in the military, college, and community samples. Additionally, within the military, discrepancies in sexual assault prevalence rates exist in overall reporting and in male and female reporting.

Military – Women

Among women in the military who report experiencing an attempted or completed rape while serving in the military, rates ranged from 9.5% to 43%. Bostock and Daley (2007) found that 9.5% of Air Force women reported that their most recent rape experience occurred while serving in the military. Another study by Murdoch, Pryor, Polusny, and Gackstetter (2007), conducted across the five military branches, found that 10.5% of military women reported an attempted or completed rape. A study conducted by Coyle, Wolan, and VanHorn (1996) found that 19.6% of women who sought services at a Veteran's Affairs (VA) medical center reported an instance of rape. Another study conducted among the VA medical center population found that 43% of women utilizing VA services for stress disorders reported an instance of attempted or completed rape (Fontana & Rosenheck, 1998). Yet another study among the VA population found that

33% of those who utilized counseling services experienced an instance of unwanted oral, anal, or vaginal sex (Suris, Lind, Kashner, & Borman, 2007).

These varying reports of prevalence rates are a result of different studies that used different samples. For example, some studies focused on a single military branch to derive sexual assault prevalence, while others were cross-branch studies that included several branches of the military, such as the Army and Navy (Turchik & Wilson, 2010). Additionally, some studies included samples of the general military population, while others were samples of those seeking services from the VA medical center. Further, even the samples taken from the VA hospital population differed, as some utilized stress disorders services or counseling services, as well as many other services (Turchik & Wilson, 2010). The definition of sexual assault also differed between studies. Study definition of sexual assault ranged from rape to attempted and completed rape to unwanted oral, anal, or vaginal sex. Until consistent methodology and definitions are used, varying reports of prevalence of sexual assault will abound (Fontana & Rosenheck, 1998).

Military – Men

In general, there are vastly fewer studies on military sexual assault than sexual assault among the civilian population, and there are even fewer studies on military sexual assault where men are the victims (Turchik & Wilson, 2010). Prevalence rates for male victims of sexual assault in the military range from 1% to 12%. Smith, Frueh, Sawchuck, and Johnson (1999) found a lifetime prevalence of sexual assault among a sample of combat veterans. Among Vietnam era veterans, 11.8% reported some form of adult sexual abuse (Krinsley, Gallagher, Weathers, Kutter, & Kalouek, 2003). A study by

Martin, Rosen, Durand, Stretch, and Knudson (1998) discovered that 6.7% of active-duty Army soldiers had experienced sexual assault during their lifetime, with 3% since entering the military. A large nationwide sampling of veterans who used VA health services in 2003 found that 1% of men reported military sexual trauma (Kimerling, Gima, Smith, Street, & Frayne, 2007). In another sample of male veterans seeking PTSD disability benefits, Kimerling et al. (2007) found that 4% reported military sexual assault.

One possible reason for discrepancies in sexual assault prevalence among military men lies in the fact that studies define prevalence from three different perspectives. Some studies focused on lifetime sexual abuse, which could include adult and childhood experiences; other studies focused on sexual abuse as an adult only, while other studies focused on sexual assault during military services. Even the studies that use the same timeframe have differing prevalence rates. In some cases, the prevalence rates for a timeframe are close in proximity, and in other cases, they are not close in proximity. This again is further evidence that there needs to be standards for defining the timeframe for sexual assault prevalence. Currently, there are no data available on prevalence rates between officer and enlisted personnel or as it relates to years of service.

Military versus Civilian

Sexual assault rates tend to be higher in the military than in the civilian population. Eighteen to 25% of Americans report experiencing an attempted or completed rape in their lifetimes (Basile, Chen, Black, & Saltzman, 2007), while upwards of 33% of military women reported having an attempted or completed rape during their time in the military (Fontana & Rosenheck, 1998; Suris et al., 2007). Across a lifetime, the prevalence of sexual abuse that only occurs during military service is just as high as

or higher than the general population. Researchers have surmised several possible reasons for the high prevalence in the military population, which include sociodemographic factors, high rates of childhood/adolescent sexual abuse, and the culture of violence in the military, all of which will be discussed.

Psychological Effects of Sexual Assault

Both male and female victims of sexual assault suffer high rates of depression and anxiety symptoms (Elliott et al., 2004; Ratner et al., 2003; Thompson et al., 2003), sexual dysfunctions (Becker, Skinner, Abel, & Cichon, 1986; Elliot et al., 2004; Van Berlo & Ensink, 2000), and substance abuse and dependence (Burnam et al., 1988; Ullman & Brecklin, 2003). Studies also report that victims of sexual assault are more likely to report suicidal ideation and attempt suicide (McFarlane et al., 2005; Ratner et al., 2003). Research has shown that confusion around sexual identity, masculinity, and sexual orientation that occurs after an assault is unique to male victims. Garnets, Harek, and Levy (1990) found that homosexual victims may experience internalized homophobia and feel the assault was punishment for being gay; while Mezey and King (1992) and Scarce (1997) reported that heterosexual victims might feel confused about their sexuality and masculinity.

Military personnel who experience sexual assault also experience similar psychological effects as civilians. Martin et al. (1998) reported that male and female active-duty soldiers experiencing lifetime sexual trauma reported higher levels of global psychological distress and physical health symptoms. Research conducted by Murdoch et al. (2007) revealed that service members exposed to sexual harassment or assault had increased psychiatric symptoms and poorer functioning compared to those who had not

experienced sexual assault. Finally, Smikle, Fiedler, Sorem, Spencer, and Satin (1996) found that Air Force recruits who reported past sexual abuse were less likely to complete basic training.

There are two main critiques of the research related to psychological effects of sexual assault. First, most of the research on sexual assault, especially in the military, has focused on female samples (Turchik & Wilson, 2010). A vast majority of the studies assume that a majority of the victims of sexual assault are female and that the majority of the perpetrators of sexual assault are male, but do not provide sex data on perpetrators. As a result, there are little data on the sexual profile of the male perpetrator, meaning there is no knowledge of whether the perpetrators were victims of sexual assault. Most studies focus on women; therefore, there are little data on men who are sexually assaulted by either men or women. The studies that were found that delve into the psychological effects of male victims, particularly those that relate to the confusion around sexual identity, masculinity, and sexual orientation after an assault, are few in number (only three – 1990, 1993, and 1997) and have not been recently replicated. Given the uniqueness of this finding to male sexual assault victims, there is a need for current research examining the unique effects on males, specifically, and the magnitude of sexual assault on males, more broadly. While this study does not attempt to delineate or compare male and female military sexual assault victimization, there is clearly a need for research focused on that aspect.

Sociodemographic Factors

Although the demographics of military personnel are quite different from the general population writ large, certain aspects of both victims and perpetrators of sexual

assault in both populations are similar. Regarding differences, the military has certain eligibility requirements, such as age and health guidelines, which result in fewer women, younger individuals, more high school graduates, and fewer individuals who attend college, particularly within the enlisted ranks (U.S. Government Accountability Office [GAO], 2006). Additionally, there are fewer Whites, Hispanics, and Asians in the military and more African Americans than are found in the general U.S. population. Those entering the military often have lower socioeconomic status than the general population (GAO, 2006).

Acierno et al. (2001) and Elliot et al. (2004) documented that victims of sexual abuse tend to be younger, female, divorced, with lower socioeconomic status. For example, in a large stratified national sample of civilian victimization, Perkins (1997) discovered that 18- to 25-year-olds represented 35% of sexual abuse victims, yet they only represent 12% of the total U.S. population. Records from the DoD (2014) reveal that 83% to 87% of military sexual assault victims were between the ages of 17 and 24, while 40% to 68% of the perpetrators were between the ages of 17 and 24, indicating that the perpetrators tended to be somewhat older and of a potentially higher rank. In a sample of 4 million men and women veterans, Kimerling et al. (2007) found that those who reported a sexual assault during military service were more likely to be younger, White, and nonmarried, compared to those who indicated no military sexual assault. According to the DoD (2004), military personnel who are not married, younger, and enlisted may be at greater risk of sexual assault because they are more likely to live on base in close quarters, have less power within the military, and more likely to be exposed to dating violence.

There are inconsistencies in how demographic factors influence the prevalence rates of sexual assault between military and civilian populations (Morris, 1996). Some studies indicated that the victims tend to be lower in age, less educated, non-White, and divorced (Harned, Ormerod, Palmieri, Collinsworth, & Reed, 2002; Mezey & King, 2000), while others studies indicated that the victims of sexual assault tended to be lower in age, less educated, non-White, and single (Kimerling et al., 2007; Suris et al., 2007). As noted earlier, differing results are due to the variability in methodologies (i.e., definitions of sexual assault, VA hospital samples versus general military samples). As a result, more sound research is needed to provide more consistent and reliable findings in the area of sexual assault.

Childhood and Adolescent Sexual Abuse

Another possible reason for the differing sexual assault rates between military and civilian populations may be the differences in childhood and adolescent experiences of sexual abuse. Elliott et al. (2004) found that history of sexual abuse was strongly related to experiencing a subsequent sexual assault. In a national telephone survey among the general population, 27% of adult women and 15% of adult men reported sexual abuse during childhood or adolescence (Rosen & Martin, 1996). Bostock and Daley (2007) asked the same questions to Army men and women and found the percentages to be almost twice as high for women (49%), but similar for men (15%). A study by Shultz, Bell, Naugle, and Polusny (2006) found similar rates in childhood sexual abuse among female military (48.6%) and female civilian (43.2%) populations. Merrill et al. (1999) suggested that those with childhood sexual abuse experiences may be more likely to join the military than those without a sexual abuse history, and they are at greater risk of re-

victimization in the military. The authors argued that those with sexual assault histories see the military as an escape or fresh start or seek an environment to release pent up frustration; however, the literature on this specific topic is confusing at best, with studies showing diametrically opposing results.

A Culture of Violence in the Military

According to Ember and Ember (1994), military personnel are trained to believe and accept that violence towards another human is the means by which the government achieves its ends when other forms of national power are not successful. Ember and Ember also argued that based on this stance, military personnel are able to legitimize the use of violence for themselves. During World War II, the gun firing rates of servicemen was only 15% to 20% (Grossman, 1996). Since that time, the military has employed desensitization and conditioning methods that have dramatically increased firing rates. Therefore, it is easier for military personnel to kill and harm fellow human beings. Turchik and Wilson (2010) argued that given the greater desensitization to violence and the personal acceptance of violence as an acceptable tool to achieve one's objectives, obtaining sex through violence could be a way to explain the higher rates of sexual abuse in the military compared to the civilian population. Data show that sexual assault rates among the civilian population have been decreasing over the last 20 years (Department of Justice [DoJ], 2012). However, the rates of sexual assault in the military have been stable if not on the rise during that same period, depending on the source of the information. Given these disputable notions, it is unclear how, or if, the culture of violence in the military affects sexual assault rates in the military and builds a case for my study.

Measures of Effectiveness

Although sexual assault rates have been decreasing in the general population for the past 20 years (DoJ, 2012), the rates are still high among the undergraduate college population. Research estimates that 20% to 25% of female undergraduates experience attempted or completed rape (Krebs, Lindquist, Warner, Fisher, & Martin, 2009; Martin et al., 1998), and these numbers are even higher in the military (Fontana & Rosenheck, 1998; Suris et al., 2007). As such, it is important to implement effective prevention programs, particularly in these two high prevalence environments.

College and government institutions have the option of developing their own programs from scratch or choosing from an array of prevention programs that already exist. Choosing programs that already exist can be beneficial, as it saves time in development and implementation, and guidelines for implementation are typically available. Additionally, the effectiveness of existing programs can be evaluated and compared to determine which program is most suitable. However, there are difficulties in comparing existing programs for several reasons, which includes criteria that varies among prevention studies, including outcome measures, target audiences, program facilitators, program format, and program content (Vladutiu, Martin, & Macy, 2011). Each of these areas will be explored in more detail below.

Program Outcome Measures

There are several outcome measures used among sexual assault prevention programs that make them difficult to compare. In a review 102 sexual assault prevention programs in peer-reviewed journals between 1977 and 2002, Vladutiu et al. (2011) found that 100% of the studies used rape attitudes as an outcome measure. However, attitude

measures were not similar, as they were either rape-related attitudes (attitudes about the perception of rape) or rape-supportive attitudes (attitudes about the circumstances that precede or lead to rape). The second most common outcome measure was rape myth acceptance. Examples of rape myths are "women are asking for it," "she should not have been dressed like a whore," or "no means maybe." Rape myth acceptance was measured as an outcome by 88% of the studies. Incidence of sexual assault perpetration and/or victimization was the third most commonly used outcome. Incidence of sexual assault perpetration and/or victimization after the completion of the prevention program was used as an outcome measure by 63% of the 102 studies. Also tied for third were changes in dating behaviors and rape awareness behaviors after completion of the prevention program. Sixty-three percent of studies also assessed dating behaviors and rape awareness behavior. Behavioral intent, rape empathy, and rape/sexual assault knowledge, all after the completion of the prevention program, were used as outcome measures in 50% of the studies. No two studies on sexual assault prevention had exactly the same outcome measures using the exact same questions (Vladutiu et al., 2011). Again, this is problematic, not only for comparisons, but also for establishing true efficacy of the prevention program.

A similar systematic review was conducted more recently that examined 140 outcome evaluations of primary prevention programs for sexual assault violence as the focus on prevention program peaked during the late 1990s and then again in the 2010 and 2011 timeframes (DeGue et al., 2014). It is important to note that this review took a systematic view of over 30 years of research on programs designed to prevent sexual violence. Of these 140 programs, only three prevention strategies showed signs of

promise regarding decreasing sexual violence. These three strategies were designed for use with young adolescents, using a rigorous outcome evaluation (DeGue et al., 2014). While the overall number of studies geared towards general research of sexual violence has increased, prevention evaluation research is severely lacking (DeGue et al., 2014). The promising programs are Safe Dates (Foshee et al., 2005), Shifting Boundaries (Taylor, Stein, Mumford, & Woods, 2013), and funding associated with the 1994 U.S. Violence against Women Act (Boba & Lilly, 2009). Although, these programs have shown signs of promise, they are geared towards a much younger population (12 years to 17 years), where dating concepts and healthy relationship skills are initially taught. As part of an ongoing health class curriculum, it makes these programs fairly specific in their target audience and not appropriate for use in either a military or campus setting. More specifically regarding the lack of promise with adult interventions, the lack of effective prevention interventions may very well be the result of the lack of adherence of these interventions to the principles of effective prevention, as laid out in the Nations et al. (2003) study, which will be described in detail later in this paper.

It is important for any study to review theoretical underpinnings that address or explain the phenomenon under review. The following section reviews the literature from the theoretical lens, which typically helps explain why sexual assault occurs in the first place and how theories might inform interventions designed to reduce and eliminate this social problem.

Theories Regarding the Causes of Sexual Assault

Theories related to the perceived causes of sexual violence and rape have been around for decades and have shifted over time. Early concepts noted a more individual or

psychopathological rationale for assault, which attempted to answer questions such as why certain people commit these acts, to broader community and societal frameworks that take into consideration environmental aspects, as well. Most studies overtly state that evidence of strong sexual assault prevention-specific theoretical framework is severely lacking (DeGue, Holt et al., 2012). In fact, the majority of sexual assault prevention interventions (SAPIs) do not clearly cite or even make a causal reference to a theory-based foundation for its approach, and those that do, cite a variety of theories, which are often in conflict. In addition to a lack of a strong theoretical foundation, many published reviews also use vastly different measures, making it even more difficult to assess the overall effectiveness of any such programs (Bachar & Koss, 2001).

The four theories most frequently inferred within the context of sexual assault prevention literature will be briefly discussed for purposes of understanding this problematic social issue from a theoretical perspective: problem behavior theory, social psychological/feminist theory, social learning theory, and the social ecological model (SEM). As mentioned, specific reference to theory or theoretical framework on the issue of sexual assault prevention is largely lacking in the published literature. Vague references to theory can occasionally be found; however, most of the time, readers are left to "tease out" elements of theory. This is the case despite over a decade of scientific evidence supporting the CDC's (2012) public health model for prevention programs and the nine principles of prevention outlined in that model.

Problem Behavior Theory

In 1977, Jessor and Jessor (as cited in Vazsonyi et al., 2010) believed that a comprehensive, multidimensional model could explain behavioral problems in youth,

which they called problem behavior theory (PBT). This model attempts to explain the root causes of problematic social behaviors (Vazsonyi et al., 2010). At the core, PBT is a systematic, multivariate, social-psychological conceptual framework derived from concepts identified in social learning theory. According to PBT, all problem behavior is the result of person-in-environment interactions, where society defines the behavior as a problem or a source of concern according to the norms of the given society (Steinberg & Morris, 2001).

In recent years, the PBT model was refined and expanded to consider not only youth, but young adults as well and incorporates three sets of risk and protective factors in a theoretical framework for these factors. Risk factors include family, peer, school, and neighborhood risk factors associated with unhealthy models from each of these settings. Protective factors include parental, peer factors that model conventional behaviors, controls towards intolerance of deviant or problem actions, and positive support factors modeled by family, peers, and the community. Currently, PBT portends that all of the above risk and protective factors account for a variety of antisocial or problem behaviors and constitute problem behavior syndrome (PBS) (Vazsonyi et al., 2010). Put more simply, this framework consists of perceived environment systems, personality systems, and behavior systems.

Each of the systems mentioned either contribute to problem behaviors and actions or serve as controls to problem behaviors based on the degree by which controls, models, and support for either prosocial or antisocial behavior exists for each person (Steinberg & Morris, 2001). The crux of the PBT theory extends this focus on problem behavior by stating that if a person engages in any type of problem or deviant behavior, they are more

likely to engage in other problem behaviors due to the linkage in social ecology. This means that when people are socially organized in groups, when problem behaviors occur, the social norms of the group are enforced and supported. The same is said for those that operate in socially conforming ways and refrain from problem behaviors. They, too, have their behaviors reinforced by their social group, and those behaviors are likely to be replicated and supported due to group norms.

While PBT is not directly referenced in the sexual assault prevention literature, one can draw some inferences to this theory when looking at the body of knowledge related to sexual assault on college campuses, as well as within the military. The ties to PBT can be seen when looking at the problem behavior of underage drinking and over consumption of alcohol, which is one of the most common co-occurrences identified in many campus sexual assault studies, as well as military sexual assault reports (DeGue, Simon et al., 2012). In addition to alcohol over consumption, other problem behaviors that lend to sexual violence pertain to peer acceptance and even encouragement of sexual violence, most notably and widely reported in main stream media regarding assaults related to fraternities and among sports team members (some examples, Duke lacrosse team, the Florida State rape case, Steubenville Ohio football team rape case). Similar examples can also be found in the recent news that highlights the hyper-masculine military culture, which has experienced widespread sexual assault exposure that at very least, tacitly condones such behavior, and at worst, enjoys senior leadership and high-level cover-ups of such abuse (Dick et al., 2012).

Social Psychological and Feminist Theories

One highly cited article regarding rape and associated theory is a study by Martha Burt (1980). Burt examined several aspects of both social psychological and feminist theory to better understand causes of sexual violence in the United States during the 1970s, at the height of the women's movement. This study was the first to proceed from a theoretical basis, since prior to this, a mostly nontheoretical approach was being undertaken by social scientists conducting rape research (Burt, 1980). Burt believed that the patriarchal structure of society was the underlying cause of sexual violence toward women. Other precepts of these theories are that sexual violence keeps women fearful to the degree that they are basically dependent on others for their very survival. Burt also believed that "rape is the logical and psychological extension of a dominant-submissive, competitive, sex-role stereotyped culture" (p. 229). Brownmiller (1975) believed that sex-role stereotyping is heavily correlated to rape myth acceptance and rape supportive attitudes and beliefs. This ideology excuses and even supports sexual violence against women. Part of this belief system also tends to incorporate the "just world" hypothesis, which presumes that when bad things happen (i.e., rape or sexual assault), the incident is attributed to the victim, which is known today as "victim-blaming" (Burt, 1980).

At the time of Burt's 1980 study, the majority of Americans believed in many rape myths, such as woman who go to the home or apartment of a man on the first date implies she is willing to have sex, and that in the majority of rapes, the victim was promiscuous or had a bad reputation. These early studies also found that the majority of Americans believed that at least 50% of filed rape complaints were falsely filed, because the woman was upset or angry with a man and wanted to get back at him or it was in an

attempt to cover up an unwanted pregnancy. Early study findings were eerily correct when stating that while understanding the origins of sex-role stereotyping and rape myths are a good first step in rape prevention, changing societal attitudes and beliefs surrounding this very complex issue would not be an easy task (Burt, 1980). This, unfortunately, holds true at present, as rape myths still abound, particularly in settings where sexual assault is prevalent, such as college campuses and within the military.

> Burt (1980) states in her seminal article that it is only by
>
> promoting the idea of sex as a mutually undertaken, freely chosen fully conscious interaction, in contradistinction to the often held view that it is a battlefield in which each side tries to exploit the other while avoiding exploitation in return, can society create an atmosphere free of the threat of rape. (p. 229)

Burt emphatically states that rape is the logical extension of a dominant-submissive, competitive, sex-role-stereotyped culture. Nowhere is this more likely to be true than in the military, which is currently experiencing what some would term a rape epidemic (Dick et al., 2012). Burt firmly states in her conclusion in the 1980 study that interpersonal violence was the strongest predictor of rape myth acceptance and that sex-role stereotyping was the preliminary step for targeting women as potential sexual victims; acceptance of interpersonal violence may be the very ingredient that leads to sexually violent actions (Burt, 1980). This article, dated back in 1980, shines the light on what the sexual assault prevention community is just now starting to embrace, which is the need to fully develop and adopt an accurate theoretical understanding about rape and sexual violence to better propel social change regarding this troubling phenomenon (Burt, 1980).

Social Learning Theory

According to Bandura (1977), social learning theory (SLT) dates back to the 1890s when William James laid the foundation for a study of person and environment, also known as the "social self." In the early 1900s, Alfred Adler propelled this concept by stating that behavior is purposeful and motivated by the pursuit of an individual's goals (Bandura, 1977). Furthermore, each individual's perception and attitude towards their social environment has significant influences on their behavior. A person's thoughts, feelings, and behaviors are transactions with their physical and social environments (Bachar & Koss, 2001). In the 1940s, a new publication was launched to further clarify this framework – Social Learning and Imitation. This publication focused on the belief that human behavior is not reinforced or discouraged by external or environmental factors, but all human behavior is internally motivated (Miller & Dollard, 1941).

While many researchers have expanded on the initial work done in SLT, all versions of this theory have the same basic tenants: people learn by experience and observation, people model behavior based on identification (similarity and emotional attachment), and consequences influence whether a person will repeat a behavior (reward versus punishment). Albert Bandura (1977) expanded traditional SLT and called it social learning theory/social cognitive theory. Social learning theory has been used as a framework to study a variety of deviant, criminal, and aggressive behavior, including sexual violence. As it relates to sexual violence, SLT states that sexual aggression is learned through frequency, relative importance, duration, and intensity of social interactions or learning by association, observations (behaviors and their consequences), vicarious learning (i.e., media influences), modeling (imitation), and reinforcement

(either positive or negative) (Bandura, 1977). The good news about SLT and sexual violence is that according to this theory, sexual aggression and rape are not inevitable, but learned, shaped by consequences, and continue if reinforced (or not punished).

According to this theory, male violence against females exists because it is modeled at all levels of human interaction (individual, group, community, and societal). In addition, violence frequently achieves its goals by ending arguments or conflict at the relationship level; therefore, it is believed to have positive results for the offender (relieves tension and leaves the offender feeling better) and is rarely associated with serious consequences or punishment for the perpetrator (Lanier, Elliott, Martin, & Kapadia, 1998).

The literature is clear in that SLT has several implications for sexual assault prevention interventions at individual, community, and societal levels, and may be particularly effective with interventions aimed at youth and young adults, in that SLT refers to peer influence models. This is true, since many youth express the need to fit in with their peers during adolescence and young adulthood. Social learning theory is somewhat lacking in that it has been stated to need to develop creative approaches beyond classroom intervention (Lanier et al., 1998). Without continually evolving effective prevention programs, rape will continue to occur, because sadly, in many cases, there are often no real consequences to perpetrators; SLT is one theory that clearly states this problem can be rectified.

Social Ecological Model

The most widely referenced and most current theoretical model discussed in sexual assault prevention literature is the social ecological model (SEM). Currently

endorsed by the CDC (2012) under their public health framework, SEM squarely targets the issue of sexual assault prevention. The SEM looks at several levels of overlapping and interrelated human interactions regarding prevention and includes not only individual and relationship aspects, but also community and societal roles that need to be energized to tackle the issue of sexual violence (CDC, 2012). As a result of the multiple layers outlined in the SEM, which include larger societal elements and not just individual levels, this approach views rape and other forms of sexual assault not as a function of uncontrollable sexual desires, but as forms of overt violence perpetrated primarily by men against women (CDC, 2004). Perhaps based in part on the CDC findings, military prevention efforts have recently moved away from focusing solely on the individual in the fight against sexual assault and have embraced elements of the SEM for sexual assault prevention endorsed by the CDC's public health model (DoD, 2014).

Figure 1 looks closer at the conceptual framework of the SEM. This figure provides a detailed look at the four main levels of influence that contribute to sexual violence through this framework—individual, relationship, community, and societal influences (Dahlberg & Krug, 2002). The model depicts the notion that all four levels must be targeted or addressed before any significant change can be realized. This model moves "upstream" to address aspects of prevention not been targeted in the past, most notably at the community and societal levels. This is particularly beneficial, since this model within the public health approach targets the norms, beliefs, and social and economic systems that create conditions for the occurrence of sexual assault and rape (Dahlberg & Krug, 2002).

While DoD strategy documents do not clearly state the specific reason for the

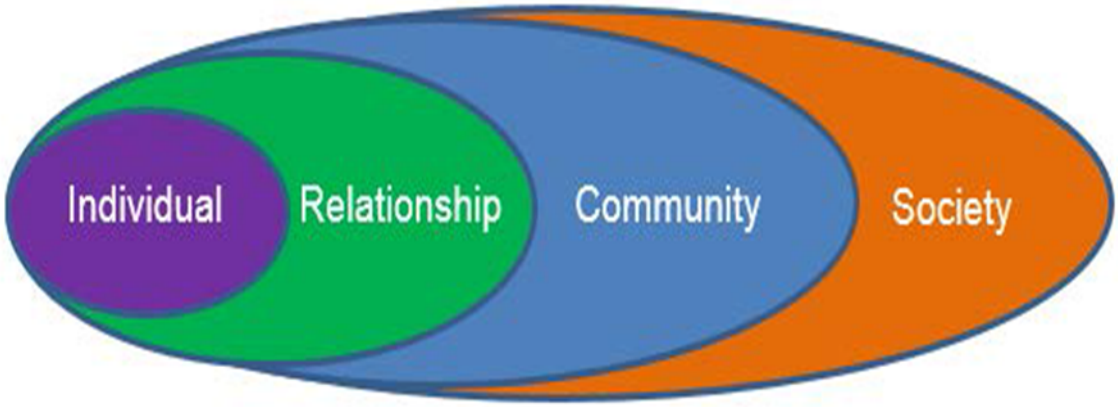

Figure 1. The social ecological model.

move to the SEM, the rationale may be that this model supports a more comprehensive public health approach that addresses not only an individual's risk factors, but also the social norms, beliefs, and economic systems that lend themselves towards conditions that provide the opportunity for sexual violence (DoD, 2014). This SEM retains elements that reflect individual attitudes and beliefs and takes aim at issues, such as antisocial behaviors, which might lead to sexual violence, but it also adds three other levels of focus for a much more comprehensive approach to sexual violence. These include the relationship level, which includes peers and family environments; the community level, which includes schools and workplace environments; and the societal levels, which currently support sexual violence as a cultural norm (DeGue, Holt et al., 2012). Since DoD is adopting the SEM for its sexual assault prevention framework, a closer look at the key aspects of SEM are warranted.

According to the CDC (2004), the SEM is an effort to move upstream in the realm of sexual violence prevention to a more proactive prevention position rather than a reactive, response mode. To clarify, in a recent publication, the CDC used the analogy of

a fisherman on the banks of a river, quietly fishing when he hears someone screaming for help. The fisherman jumps in the water and rescues the person who was being swept downstream by a raging river. This happened several times until the fisherman decided he needed to find out what was happening "upstream" that was causing all of these people to be in need of rescue from the river. This same idea, moving “upstream” from the response aspect of sexual assault, while very important and crucial to those victims that suffer this horrendous crime, is analogous to staying "downstream" and continuing to simply rescue those that have been “swept offshore.” Unless there is a concerted effort to get at the root cause of the problem and institute change upstream, I believe the incidence of sexual assault will continue unabated. The CDC's Rape Prevention and Education grant program seeks to be a major contributor to the upstream solution to sexual assault, and with that in mind, they have moved from earlier conceptual approaches on rape prevention to the current public health model and, subsequently, to the SEM approach for rape prevention (CDC, 2012).

Principles of Prevention

One study in the prevention arena outlined nine widely recognized prevention principles across four key areas (substance abuse, risky sexual behavior, school failure, and juvenile delinquency and violence) and has been touted as a seminal study on effective prevention principles and is also currently the cornerstone of the CDC’s public health model on prevention efforts (CDC, 2012). These nine principles of prevention are as follows (Nation et al., 2003):

1. Comprehensive: Utilize multiple components to target key areas of influence (family, peers, community, society).

2. Various teaching methods: Utilize multiple teaching methods to focus on increasing awareness of problem behavior, as well as an understanding the skills needed to address the problem behavior.
3. Sufficient dosage: Programs need enough intervention to create the desired effect, as well as follow up or booster sessions to maintain desired outcomes.
4. Theory driven: Programs need theoretical underpinnings or frameworks based on scientific research.
5. Positive relationships: Programs should provide exposure to adults and peers in ways that promote strong, positive relationships that promote positive results.
6. Appropriately timed: Programs administered early enough to have an impact on the development of the problem behavior and that are sensitive to the needs to participants.
7. Socioculturally relevant: Programs tailored to the community and cultural norms of the participants.
8. Outcome evaluation: Programs with clear goals and objectives that systematically document results relative to goals.
9. Well-trained staff: Programs are well-trained, with professional staff trained regarding the implementation of the intervention.

As previously stated, most programs in the sexual assault prevention arena clearly lack the theory driven component. Furthermore, Nation et al. (2003) discussed the need for scientific justification for a prevention intervention, and although this concept appears to be self-evident, a review of many community and school-based intervention programs

revealed that this basic concept is, for unknown reasons, routinely overlooked or ignored altogether. One study indicated that interventions were typically based on a blend of logic and previous experience with basis in research (Fisher & Fisher, 1992). Two types of theories—etiological and intervention—are known to play an important role in prevention. Etiological theories focus on the cause of a given problem behavior (Kumpfer, 1997), whereas intervention theories are aimed at creating the best ways to change maladaptive behaviors discovered by those causes of poor behavior and, ideally, in preventing the unwanted behavior from occurring again.

The CDC's public health approach is concerned with the health of populations not individuals; therefore, it appears more aligned with the intervention theory model. Regarding rape prevention, this model includes defining the problem (data collection), identifying risk and protective factors (for both victimization and perpetration), developing and testing prevention strategies (assessments, rigorous evaluations), and widespread adoption of effective prevention strategies and programs (CDC, 2004). As with other public health interventions, rape prevention divides into three categories: primary (preventive or before sexual violence occurs); secondary (after sexual violence occurs, treatment for short-term consequences of violence); and tertiary (long-term response after sexual violence occurs; deals with lasting consequences of violence and sex offender treatment interventions) (CDC, 2004).

Promising Interventions

Having discussed the significance of sexual assault and theories on the prevention and response to sexual assault, I now turn briefly to two promising interventions: Shifting Boundaries and Safe Dates. Although these programs are highlighted in the literature as

promising (DeGue et al., 2014), they are tailored to adolescents and not to either an adult military or adult campus population; therefore, these programs would need to be evaluated with those populations before any clear picture of their efficacy is realized.

Shifting Boundaries

Shifting Boundaries is a two-part intervention program geared towards middle school youth in sixth and seventh grade and highlights the negative consequences of sexual violence for offenders and the monitoring of "unsafe" or risky areas at schools. The program involves classroom curricula, as well as a school-wide portion. The classroom component is composed of six sessions that cover a variety of topics, including gender relations, setting boundaries, bystander roles, and other related topics. There are both written lessons, as well as activities that allow the youth to absorb experientially the learning objectives. The school-wide portion involves a poster component to increase awareness of and reporting of any type of sexual harassment or violence. This program was evaluated using an experimental design with random assignment. The results showed there was a statistically significant reduction in the frequency of total violent victimization by a peer (27%) at the 6-month follow-up for the school-wide portion; however, the study also revealed mixed results for the classroom portion of curricula, leading to a need for further studies for this intervention (Taylor et al., 2013).

Shifting Boundaries, unlike almost every other prevention program found in the literature, clearly states its theoretical framework, namely, the theory of reasoned action (TRA). The TRA is a behavioral theory developed by Martin Fishbein in 1967 that was later refined into what was said to delineate the conditions upon which behavior change occurs (Ajzen & Fishbein, 1980). The TRA built on theories surrounding attitudes and

developed linkages between attitudes and behaviors that addressed much of early research, which had weak connections between how attitudes and behaviors correlated. Interestingly, despite the seemingly cogent concept for linking attitudes and behaviors, no other prevention intervention appears to align, directly or indirectly, with this theory.

Safe Dates

Safe Dates is a school-based and community-based program that targets adolescents in grades 8 through 12. Results of this program have shown to be effective at behavioral change for up to 4 years postintervention (DeGue et al., 2014). The program consists of five components: a 10-session, 50-minute per session dating abuse curriculum; a play about dating abuse; a poster contest; parent materials, including a newsletter and other information; and an evaluation questionnaire. While no specific theory is discussed as the foundation for Safe Dates, the program description states that the basis for the program includes promoting changes in norms tied with improvements in conflict management skills (DeGue et al., 2014). This program has shown to be effective with adolescents, but the question remains whether this program would prove effective for either a military or a college campus setting. Future research is required to answer these questions.

Factors That Influence Prevention Effectiveness

The literature review thus far examined sexual assault prevention programs in relation to characteristics of the target audience. Some additional factors identified are worthy of mention. For example, some studies examined single-gender versus mixed-gender programs, while others targeted all male audiences. The chosen target population

used in prevention studies is important, because the findings of effectiveness among single-gender and mixed-gender audiences differ based on the outcome measure (Anderson & Whiston, 2005; Bachar & Koss, 2001; Brecklin & Forde, 2001).

Based on Vladutiu et al. (2011), all-female programs are effective when the outcome measures are rape attitudes, postprogram behavioral intent, rape awareness, and knowledge about sexual assault. All-male programs are effective when the outcome measures of effectiveness are improving rape-related attitudes and rape empathy, reducing rape supportive behaviors, and rape myth acceptance. However, mixed-gender programs were also found to be effective in improving rape attitudes, reducing behavioral intent, and rape myth acceptance (Vladutiu et al., 2011). Differing sample populations, along with the varying outcome measures, resulted in mixed results across target populations, which makes it very difficult to determine which intervention program should be adopted.

Program Facilitators

Mixed effectiveness results related to who facilitates the sexual assault prevention programs also contribute to the challenge of choosing the appropriate program. Some of the prevention programs used peer facilitators and others used professional facilitators. Both peer and professionally led facilitators were effective at improving rape attitudes, but professionally led programs were more successful at improving behavioral intentions (Anderson & Whiston, 2005). Some of the prevention program studies showed that educational workshops led by peers were effective at reducing rape myth acceptance (Vladutiu et al., 2011).

Program Format

Another element that makes sexual assault prevention programs difficult to compare is the varying formats of the interventions. Prevention programs vary in the number of sessions, the length of the sessions, and program delivery (video or lecture style) (Vladutiu et al., 2011). Generally, the findings of programs are mixed. Some sexual prevention program studies report that programs with longer duration are more effective at dispelling rape myth attitudes (Anderson & Whiston, 2005; Bachar & Koss, 2001; Yeater & O'Donohue, 1999). However, other studies revealed that short programs might also be effective (Flores & Hartlaub, 1998; Vladutiu et al., 2011). Therefore, the effect of program duration on sexual assault prevention outcome has not been clearly established. Regarding the suggested format of the prevention programs, some studies suggested mass media and public service announcements for changing rape-supportive attitudes (Breklin & Forde, 2001; Vladutiu et al., 2011), while others suggested videos, classroom courses, and workshops (Flores & Hartlaub, 1998; Vladutiu et al., 2011).

Program Content

Several characteristics of program content (i.e., topics and strategies) were employed across all of the 102 university studies review by Vladutiu et al. (2011). They included risk reduction strategies, gender-role socialization, sexual assault education, human sexuality, rape myths, rape deterrence, rape awareness, and even self-defense. The review found that each one of these content strategies were successful at improving at least one of the following outcomes: dispelling rape myth acceptance attitudes, behavioral intention, sexual assault knowledge, rape tolerance, sexual victimization, and intent to engage in risky behaviors (Vladutiu et al., 2011). So essentially, whatever

content approach was used, it worked on some level; however, there is still a clear need for a program that works across many or all levels.

With a multitude of outcome measures used to assess sexual assault program effectiveness, the content approaches become less meaningful because there are no rigorous, universally accepted standards of effectiveness. Additionally, the various content recommendations are based solely on outcome measures used in that particular study. If sexual assault prevention programs are to be assessed objectively to determine which programs actually address the issues that are directly related to sexual assault abatement, greater rigor needs to be applied to the selection of outcomes relative to their impact on sexual assault behavior. However, since none of the military programs has been evaluated objectively, there is an urgent need to conduct a baseline study regarding efficacy from which to build on using relevant components from promising programs.

Motivation to Intervene as a Bystander

While the main goal of this study is to see if there is any change in participants due to the intervention on the three outcome measures described above, it may be that ideas from motivational interviewing (MI) could enhance participants' endorsement of components for the SAPP training. Simply supplying information about sexual assault clearly has not deterred sexual assault given the continued high rates of sexual assault despite information campaigns. Interventions designed to lift motivation to apply such knowledge may enhance the overall effectiveness of such programs (Miller & Rollnick, 2013).

To promote motivation to apply the concepts presented in the SAPP, the study used two methods: journaling and peer discussion (Hwang, Shadiev, Change, & Huang,

2015). Other studies noted that journaling and peer sharing can enhance learning. The journaling focused based on principles and techniques flowing from motivational interviewing (Millner & Rollnick, 2013). Journaling may be productive by helping to reinforce ideas taught in the SAPP. Further, sharing ideas in a small group may serve to both enhance participant's motivation to learn the material, and sharing and hearing ideas from others can reinforce the information and even promote motivation.

Motivational interviewing has a robust literature demonstrating that certain forms of conversation can promote participants' intrinsic motivation to take action through strengthening the personal rationale for taking the action (Miller & Rollnick, 2013). Specifically, participants internalize motivation by forming their own arguments for a particular position (Miller & Rollnick, 2002). Arguing for a particular position, called "change talk," allows the client to take ownership of the reasons for behavior change and has been gaining ground as an effective component in behavior change therapy (Moyers & Martin, 2006).

Of interest, MI and self-determination theory (SDT) complement each other in that MI supplies techniques or interventions to the robust theory advanced by SDT (Vansteenkiste, Williams, & Resnicow, 2012). These two models are well-established approaches to helping clients achieve desired behavioral changes (Miller & Rollnick, 2002; Vansteenkiste et al., 2012). At its origin, MI was not based on a theoretical model, but rather on the practical success achieved with clients in more of a "bottom-up" manner. This is the classical view of practice-based evidence, as opposed to evidence-based practice. Conversely, at its core, SDT developed from theory and has only recently advanced specific techniques to promote the internalization of motivation to act. Its "top-

down" approach deals with how people tend to move actively in their lives towards growth and wellness and not act as bystanders, passively letting their environments dictate the course of their lives (Vansteenkiste et al., 2012). Motivational interviewing, on the other hand, as a "bottom-up" approach, seems to be showing a clear body of evidence without a theoretical underpinning to rely on (Vansteenkiste et al., 2012). Self-determination theory takes the stance that the best way to motivate people to change their behavior is to support their autonomy or their self-determination, and change is further achieved by clients who work with autonomy-supportive therapists (Deci, Koestner, & Ryan, 1999). Studies show that external rewards were often contradictory in creating behavior change and undermined instead of supported clients change. This is thought to be because clients felt controlled by those external factors and did not perform the desired behavior for its own sake or due to self-initiated or self-determined reasons (Deci et al., 1999).

The guiding principles embraced by MI are that when clients verbalize their own motivations for change, real change often ensues (Miller & Rose, 2009). After 3 decades of MI research, there is a body of evidence that supports that MI techniques can create behavioral change even when used with brief, targeted interventions. Motivational interviewing is also an effective complement to other active treatments, hence why this study is incorporating components of MI in the PLUS group to determine if those receiving this additional MI component achieve a greater degree of change, especially for those in the early stages of change. In addition, not only does MI result in improvements in the specific target problem area, it has also been seen to have significant results on general social functioning (DiClemente & Prochaska, 1998). This might be exactly the

type of change needed for this specific social issue (military sexual assault) and may be a great improvement when combined with standard military sexual assault training components due to the desire to affect military culture writ large, not only specific individual behaviors.

Problem Statement

Sexual assault is a significant social problem that negatively affects individuals and society. In the military, sexual assault is far too prevalent and can undermine operational goals, as well as negatively impact the well-being of victims. While military programs have engaged in SAPPs in an effort to curb this problem, little is known about the efficacy of such programs. The study tested the basic efficacy of the USAF current SAPP with regard to knowledge of sexual assault, endorsement of rape myths, and willingness to intervene to prevent sexual assault.

No rigorous evaluation of military sexual assault prevention programs has been conducted to date, and since the incidence of sexual assault among military members continues to occur at alarming rates, there is a compelling need to evaluate military prevention efforts. The only way to determine whether prevention programs are successful in combatting the sexual assault epidemic is to empirically test the efficacy of such programs.

CHAPTER 3

METHODOLOGY

This study explored a military sexual assault prevention program using a matched pair, experimental research design. Participants received the sexual assault prevention program (SAPP) currently used by the USAF; half of the participants also received a short intervention designed to promote their motivation to act on the SAPP information.

Research Questions and Hypotheses

There were five research questions approved for this study. The research questions and corresponding null hypotheses are stated below, along with the survey instrument used to answer each question.

RQ1a: Is there a statistically significant difference between pretest and posttest Bystander Efficacy Scale (BES) scores among those in the standard treatment group?

$H_0$1a: There is no significant difference in BES pretest and posttest scores in the standard treatment group.

RQ1b: Is there a statistically significant difference between pretest and posttest BES scores among those in the PLUS treatment group?

$H_0$1b: There is no significant difference in BES pretest and posttest scores in the PLUS treatment group.

RQ2a: Is there a statistically significant difference between pretest and posttest Bystander Attitude Scale Revised (BAS-R) scores among those in the standard treatment group?

$H_0$2a: There is no significant difference in BAS-R pretest and posttest scores in the standard treatment group.

RQ2b: Is there a statistically significant difference between pretest and posttest BAS-R scores among those in the PLUS treatment group?

$H_0$2b: There is no significant difference in BAS-R pretest and posttest scores in the PLUS treatment group.

RQ3: Is there a statistically significant difference in the change in BAS-R scores from pretest to posttest between the standard and PLUS treatment groups?

$H_0$3: There is no significant change in BAS-R scores from pretest to posttest scores between the standard and PLUS treatment groups.

RQ4a: Is there a statistically significant difference in pretest and posttest Illinois Rape Myth Acceptance Scale (IRMAS) scores among those in the standard treatment group?

$H_0$4a: There is no significant difference in pretest and posttest IRMAS scores within the standard treatment group.

RQ4b: Is there a statistically significant difference in pretest and posttest IRMAS scores among those in the PLUS treatment group?

$H_0$4b: There is no significant difference in pretest and posttest IRMAS scores within the PLUS treatment group.

Study Design

The study used a randomized control design to avoid potential confounds. To support the inference that the SAPPs have an effect, three components must be present in the research design: temporal priority, control over variables, and random assignment (Creswell, 2014; Leedy & Omrod, 2013). To avoid potential confounding based on demographics, study participants were matched according to age, sex, and veteran or fraternity affiliation and then randomly assigned to one of the two interventions: Air Force standard or Air Force PLUS. This ensured that every person according to the matched pair had an equal chance of being in either of the two groups and decreased the likelihood of selection effects.

Another strength of this design is that research can be repeated reliably and results rechecked. This repeatability, as well as the quality of the experimental research design, gives researchers more confidence in the results of studies that utilize the experimental design (Campbell & Stanley, 1963). However, a limitation of the experimental design includes the difficulty in implementing this design due to ethical or practical reasons, since one group may get the better of the two interventions (Creswell, 2014; Leedy & Omrod, 2013). Despite these challenges, this study used the experimental design.

Participants

Participants were University of Utah students over 18 years of age. At least 34 participants were needed for this study based on G*power analysis using .80 power with a p value of .05 and assuming a medium effect size. While only 34 participants were required based on the power analysis calculations above, 73 participants were recruited and enrolled in the study.

Recruitment emphasized efforts to identify individuals who had military experience, including recruiting from the ROTC population, as well as from the university's Veteran Support Office. Sixty-four percent of study participants were either military veterans or ROTC cadets. While administering the program only to military personnel would be most favorable, as this was the first evaluation of the program, using nonmilitary participants is supported by three arguments. First, the USAF SAPP may be efficacious in college settings by giving colleges another tool to combat sexual assault on campus. Second, the study examined the research questions of whether the SAPP works generally, which should be detectable in a college setting. Third, the USAF SAPP is administered to all Department of the Air Force civilians; therefore, a study population comprised of civilians is useful in determining efficacy for that portion of the larger Air Force training audience.

Recruitment and Participant Selection Criteria

Recruitment was achieved as a convenience and snowball sample, with posters announcing the study placed at the Union building, student housing areas, and ROTC location on campus. The inclusion criteria were any adult students over the age of 18 and willing to participate, with the ability to read and write in English. Interested persons called or emailed the principle investigator (PI) expressing interest and were then vetted to ensure they met inclusion criteria. Once inclusion criteria was assured, the PI emailed potential participants with additional study specifics, including the time and location of the intervention training, as well as the procedures for completing both the pretest and posttest via online surveys and the informed consent document.

Inclusion Criteria

Participants had to be 18 years of age or older; a student at the University of Utah; able to speak, read, and write in English; and have access to a computer to take the pretest and posttest surveys.

Exclusion Criteria

Specific exclusion criteria included those who could not read or write in English and those who did not have access to a computer to accomplish the pretests and posttests using Survey Monkey. For this study, we did not have the capacity to translate the surveys into other languages.

Setting

The study took place in the University of Utah Marriott Library classrooms on a date that was conducive for the majority of those interested in participating in the study. The rooms for each of the two sets of training were equipped with projection equipment to deliver the curriculum. The trained USAF facilitators were personnel who routinely give this training to military and civilian personnel at a local military installation. These facilitators were at the front of the classroom facing the participants as they delivered the training and facilitated the small group discussions for the PLUS treatment group.

Standard Intervention Content

The content of the training for both groups was identical, with the exception of the additional small group questions and reflection time that occurred with the PLUS group. Participants were blind to the PLUS design. The standard content was the USAF's current SAPP program, which included the following content:

1. Background information on the awareness and the nature of prevalence of sexual assault in the military, particularly the Air Force. Information regarding environmental factors that increase the risk of sexual assault. The impact that a bystander's response may have on the "continuum of harm" and how culture impacts or influences each person's role in prevention efforts.
2. Key aspects of the social ecological model in moving "upstream" to attempt to thwart or prevent an incident of sexual assault from occurring and each person's role in that effort. Information regarding what percentage of victims report sexual assault and potential reasons for not reporting.
3. Information on how to interact or talk to someone who has been a sexual assault survivor. This brief portion of the content involves how to help victims in the aftermath of an assault.
4. Information on reporting avenues, as well as content that covers reprisal and retaliation for reporting. This information covers knowledge on why some victims may choose not to report and how to overcome those obstacles by having people supportive of the victims filing reports.
5. Gender stereotyping and rape myth examples. Information on how to stay within proper and respectful boundaries, with emphasis on what constitutes safe, marginal, and dangerous behavioral, for example sexist comments and uninvited touching.
6. Bystander intervention examples in terms of what each person can do to decrease sexual assault. The content ends with the message of "moving upstream" to work to end sexual violence—moving upstream to prevent, not

simply respond to, sexual assault.

PLUS Program Additional Content

In addition to the content from the standard program, the PLUS program added the additional content. Participants were asked to write down their answers to the following questions individually and anonymously and were then given approximately 10 to 15 minutes to reflect upon their answers and discuss them in small groups of 2 to 3 participants; some small groups remained in discussion for over 20 minutes. The purpose of this additional component of the PLUS program was to further solidify and internalize the training content and allow participants the chance to think and talk about the content in a more personal, as well as interactive, way as opposed to simply being a passive recipient of a large, mass briefing training event. The PLUS questions were as follows:

1. How do you think you would feel if you were present during a potential sexual assault and failed to act or intervene as a bystander and a sexual assault occurred?
2. If you did act and intervene as a bystander, how do you think you would feel if it helped a potential victim not be victimized?
3. What benefits would come to you personally by acting as a bystander to promote the safety of another citizen?
4. What benefits would come to society if you personally acted as a bystander to promote the safety of another citizen?
5. What might be some undesired consequences of not acting as a bystander?
6. Do you have personal experience in a situation that you perceived to be a potential situation that could have led to a sexual assault?

7. Did you act?
8. Why or why not?
9. How do you think you would feel 20 years from now if you had the opportunity to act in a situation of a potential sexual assault and failed to act?
10. Has your view of "rape myths" changed as a result of this training?

Survey Instruments

The study used five validated scales routinely referenced in the sexual assault literature. The University of Utah IRB, according to guidelines for studies with human subjects, approved the instruments. In addition, reliability and validity analysis was conducted for the study population.

Updated Illinois Rape Myth Acceptance Scale – Short Form

The 20-item IRMAS (Appendix C) was developed to assess participants' endorsement of a variety of myths or stereotypes about sexual assault (Payne, Lonsway, & Fitgerald, 1999). Scores range from strongly disagree (1) to strongly agree (5). Higher scores indicate greater acceptance of rape myths. The IRMAS is arguably the most reliable and psychometrically demonstrated rape myth scale to date (Payne et al., 1999). The IRMAS authors conducted a series of studies to demonstrate the scale's construct validity through the relationship of the IRMAS to empirically and theoretically related rape acceptance variables. To measure rape myth acceptance, the revised version of the IRMAS was selected, because the scale includes updated language for college students, as well as a specific focus on accountability for rape and victim blaming. The Cronbach

alpha is .86 and includes five subscales.

Attitude Toward Date Rape Scale

The ATDRS (Appendix E) was designed to assess the extent to which undergraduate college students accept the rape myths and prevention program biases cited by date rape backlash critics. The 20-item questionnaire contains nine negatively and nine positively phrased scored statements about date rape and date rape victims and two nonscored attitudinal statements. The instrument assesses attitudes toward four major tenets of the date rape backlash literature: victim credibility/motivation, gender responsibility for date rape prevention, exaggeration of date rape statistics, and anti-male rape education bias. Cronbach alpha is .91 for the measure. Scores on the instrument range from 18 to 90, with higher scores indicating agreement with rape myth/date rape backlash. Positively scored items were coded strongly agree (5), agree (4), undecided (3), disagree (2), or strongly disagree (1).

Bystander Efficacy Scale

In the BES (Appendix D), participants indicate their confidence on a scale of 0 to 100 in performing each of the 18 bystander behaviors. Higher scores indicate greater effectiveness in ability to intervene as a bystander (Banyard et al., 2005). A participant rates her or his confidence to perform the behaviors on a scale ranging from 0 (can't do) to 100 (very certain). Examples include, "Ask a friend if they need to be walked home from a party" or "Criticize a friend who says they had sex with someone who was passed out." The mean across all 18 items becomes the total score used. Cronbach's alpha on this scale is .93. Previous research has established the construct validity of this measure

(Banyard, 2008; Moynihan & Banyard, 2008).

Bystander Attitudes Scale–Revised

All items on the BAS-R (Appendix F) are rated on a Likert scale from not at all likely (1) to very likely (5). For each item, the participants are asked, "Have you done this in the past year?"

Dating Violence Scale (Modified)

The Dating Violence Scale (Modified) (Appendix G) was developed by Shen (2008) to assess experiences of dating violence based on previous studies (Huang & Wang, 2005; O'Keefe, 1998; Reitzel-Jaffe & Wolfe, 2001; Straus, 1979). It was modified from 17 items that assessed psychological, physical, and sexual aggression to an 8-item scale that assesses sexual violence only. Cronbach's alpha for this modified scale is .97. These questions are prompted by, "When we have conflicts…" Higher scores indicate a higher level of sexual interpersonal violence. Yes = 1 and No = 0.

Data Collection and Data Entry Procedures

The self-report questionnaires were unlabeled and included only a unique study number for participants enrolled in this study. Data were entered into an SPSS database via Survey Monkey, with no names or identifiers other than the code numbers assigned by the primary investigator. There was one pretest and one posttest survey link used for the study. Participant responses were analyzed as both a group, as well as a detailed analysis between group results.

All surveys were completed electronically and were stored in a separate database for future statistical analysis for both the pretests and posttests. The list of codes was kept

by the PI (Chris Gedney) in a locked filing cabinet in a private office.

Statistical Methods and Analysis

The data were first reviewed for missing data and rectified using mean substitute, where applicable. Once the data were cleaned, the data analyst tested the internal reliability of the instruments with this study population using Cronbach's alpha statistic in SPSS.

To address the research questions, standard data analysis methods were used, such as descriptive statistics (frequency, means, percentages) and analysis of variance (ANOVA). Both repeated measures and one-way ANOVAs were used to compare pretest to posttest outcomes for statistically significant changes for each research question, including means, standard deviations, and effect sizes. To improve the blinding of the data, only group data were reported in the data analysis section below.

Rationale for ANOVA Analysis

In SPSS, the independent samples *t*-test does not give effect information, while the ANOVA procedure does; therefore, the ANOVA was the best test for this research study. Cohen's *d* effect sizes estimates were also reported in this study to aid in assessing the impact of the interventions. The PI conducted data interpretation along with the assistance of a statistician, as well support from the dissertation committee.

Administrative Responsibilities

This study was overseen directly by me, Chris Gedney, a University of Utah PhD candidate in the College of Social Work. The confidential self-report surveys were administered via Survey Monkey to the entire group of participants for both pretests and

posttests and were sent out via email. The pretest surveys were sent 1 week prior to the interventions, and the posttest surveys were sent out immediately after the training was completed for each group. The methods for maintaining confidentiality of the study data were described under study procedures, including having no names or other personally identifying information on the questionnaires, only a unique study number. I developed a Survey Monkey link and emailed the participants the link for both the pretests and the posttests. The PI and facilitators under the PI's supervision were the only ones who were involved in the research. Since the administration of the intervention did not deviate from the normal training, IRB training for the facilitators was not required, per discussions with the IRB office. Lastly, participants were advised regarding actions to take if they were upset by any of the questions on the survey and received information regarding how to contact the university counseling support center.

Assumptions of the Study

Participants were asked a series of questions and utilized a self-report format to answer each survey question. Therefore, one assumption was that participants would answer honestly, since the design ensured anonymity and confidentiality, and there would be no compelling reason to misrepresent their answers. In addition, the surveys were completed in privacy via an online survey link. All participants were volunteers and were instructed that they could withdraw from the study at any time for any reason, which lends to truthful responses for those who willingly participated.

Since this study explored a military intervention, and since no rigorous evaluation of the program had previously been conducted, this study lays the foundation for future research on both versions of the intervention. In the future, for instance, the Air Force

program could be evaluated compared to an Army or Navy program to see which program shows a greater degree of improvement from pretest to posttest using active duty military members as opposed to student veterans and the general civilian student population. Similarly, the military program could be studied comparing it to other promising programs mentioned previously to see if or how components of promising programs might be embedded. This study is the first attempt at evaluating a current military prevention program in an experimental study design and provides the foundation for future research aimed at improving sexual assault prevention programs across the DoD in the coming years.

Limitations of the Study

All research has potential limitations, and this study is no exception. For instance, this study evaluated a military sexual assault prevention program, but had college students as opposed to military members as participants due to the lack of access for military participants and the long lead-time required in gaining military IRB approval for a dissertation study. The fact that this study conducted a pretest and only one posttest directly after the intervention is another limitation, since there was no ability to see if the effects of the change last over several months. This limitation was primarily due to the timeframe available for the study, as well as the availability of the study participants regarding long-term follow-ups. In addition, since the pool of participants was recruited as a convenience sample from one college campus, the results may not be globally applied to a larger population, but will instead be the first step in a long-term research agenda that will attempt to do just that in future studies.

CHAPTER 4

RESULTS

The purpose of this study was to evaluate the efficacy of a military sexual assault prevention program (SAPP) using a matched pair, experimental research design. Half of the participants received the standard 2015 SAPP program the USAF currently uses, while the other half received the standard SAPP in addition to a short intervention designed to promote their motivation to act on the SAPP information in an active bystander capacity. There were five research questions approved for this study. The research questions and null hypotheses are stated below.

RQ1a: Is there a statistically significant difference between pretest and posttest Bystander Efficacy Scale (BES) scores among those in the standard treatment group?

$H_0$1a: There is no significant difference in BES pretest and posttest scores in the standard treatment group.

RQ1b: Is there a statistically significant difference between pretest and posttest BES scores among those in the PLUS treatment group?

$H_0$1b: There is no significant difference in BES pretest and posttest scores in the PLUS treatment group.

RQ2a: Is there a statistically significant difference between pretest and posttest Bystander Attitude Scale Revised (BAS-R) scores among those in the standard treatment group?

$H_0$2a: There is no significant difference in BAS-R pretest and posttest scores in the standard treatment group.

RQ2b: Is there a statistically significant difference between pretest and posttest BAS-R scores among those in the PLUS treatment group?

$H_0$2b: There is no significant difference in BAS-R pretest and posttest scores in the PLUS treatment group.

RQ3: Is there a statistically significant difference in the change in BAS-R scores from pretest to posttest between the standard and PLUS treatment groups?

$H_0$3: There is no significant change in BAS-R scores from pretest to posttest scores between the standard and PLUS treatment groups.

RQ4a: Is there a statistically significant difference in pretest and posttest Illinois Rape Myth Acceptance Scale (IRMAS) scores among those in the standard treatment group?

$H_0$4a: There is no significant difference in pretest and posttest IRMAS scores within the standard treatment group.

RQ4b: Is there a statistically significant difference in pretest and posttest IRMAS scores among those in the PLUS treatment group?

$H_0$4b: There is no significant difference in pretest and posttest IRMAS scores within the PLUS treatment group.

Sample

Seventy-three participants volunteered and enrolled in the study. Of these, 63 took the pretest survey, 57 attended the training sessions, and 51attended the training sessions and completed both the pretest and posttest surveys. The demographic questions

consisted of 11 questions regarding the personal characteristics of the participants (see Appendix A). Table 1 contains descriptive statistics for the continuous demographic variables age and number of people living in the home. Table 2 contains descriptive statistics for the categorical demographic variables.

Fifty-one percent of the respondents were female; 62.7% were single and never married. A third of respondents were graduate students, the majority of which were juniors in college. Forty-seven percent of respondents worked part-time and 62.8% had total household income of at least $40,000. Fifty-six percent of respondents were student veterans and 33.3% belonged to either a fraternity or sorority. Twenty-eight percent of respondents were agnostic, followed by Protestant and then LDS (see Table 2). Forty-seven percent of respondents classified themselves as politically moderate. The average age of all respondents was 29.30 years (*SD* = 9.63), and the average number of people living in the home was 3.31 (*SD* = 3.26).

Preliminary Analysis

To assess the reliability of the BES, BAS-R, and the IRMAS, Cronbach's alpha coefficient was calculated for each of the three measures. Cronbach's alpha measures the

Table 1

Descriptive Statistics for Age and Number of People Living in the Home

Group		*N*	*M*	*SD*
Standard	Age	25	29.76	9.888
	In Home	24	3.12	1.624
PLUS	Age	25	28.84	9.547
	In Home	25	3.48	4.322
Total	Age	50	29.30	9.630
	In Home	49	3.31	3.261

Table 2

Descriptive Statistics: Categorical Demographic Variables

	Standard		PLUS		Total	
	N	%	*N*	%	*N*	%
Gender						
Male	15	60.0	10	38.5	25	49.0
Female	10	40.0	16	61.5	26	51.0
Marital Status						
Married	9	36.0	7	26.9	18	31.4
Divorced	1	4.0	0	0.0	1	2.0
Separated	0	0.0	1	3.8	1	2.0
Single, but cohabitating with significant other	1	4.0	0	0.0	1	2.0
Single, never married	14	56.0	18	69.2	32	62.7
Current College Education Level						
Freshman	0	0.0	1	3.8	1	2.0
Sophomore	4	16.0	2	7.7	6	11.8
Junior	7	28.0	13	50.0	20	39.2
Senior	6	24.0	2	7.7	8	15.7
Graduate student	8	32.0	8	30.8	16	31.4
Employment Status						
Employed working full-time	8	32.0	6	23.1	14	27.5
Employed working part-time	11	44.0	13	50.0	24	47.1
Not employed looking for work	0	0.0	2	7.7	2	3.9
Not employed not looking for work	6	24.0	4	15.4	10	19.6
Retired	0	0.0	1	3.8	1	2.0
Annual Household Income						
$0 to $19,999	4	16.0	3	12.0	7	13.7
$20,000 to $39,999	5	20.0	6	24.0	11	21.6
$40,000 to $59,999	10	40.0	6	24.0	16	31.4
$60,000 or more	6	24.0	10	40.0	16	31.4
Campus Organization Affiliations						
Fraternity	6	31.6	2	10.0	8	20.5
ROTC	1	5.3	2	10.0	3	7.7
Sorority	0	0.0	5	25.0	5	12.8
Sports team	1	5.3	0	0.0	1	2.6
Student veteran	11	57.9	11	55.0	22	56.4
Religious Preference						
Agnostic	8	38.1	6	30.0	14	27.5
Atheist	0	0.0	3	15.0	3	5.9
Buddhist	1	4.8	0	0.0	1	2.0
Catholic	2	9.5	3	15.0	5	9.8
LDS	5	23.8	3	15.0	8	15.7
Muslim	0	0.0	1	5.0	1	2.0
Protestant	5	23.8	4	20.0	9	17.6
Political Orientation						
Conservative	4	16.0	3	11.5	7	13.7
Liberal	6	24.0	9	34.6	15	29.4
Moderate	12	48.0	12	46.2	24	47.1
Very conservative	2	8.0	0	0.0	2	3.9
Very liberal	1	4.0	2	7.7	3	5.9

internal consistency of scores derived from a survey instrument, where an achieved score of .7 or higher classifies the scale as reliable (Nunnaly & Bernstein, 1994). The BES pretest produced a Cronbach's alpha of .949, while the BES posttest produced a Cronbach's of .960. The pretest and posttest IRMAS both produced a Cronbach's alpha of .964. Cronbach's alpha for the pretest BAS-R was .925 and for the posttest, BAS-R was .934. Therefore, the BES, BAS-R, and IRMAS were considered reliable measures for this population.

Analytic Strategy

The assumptions for the repeated measures ANOVA are normality and sphericity (Field, 2013). Normality is the assumption that the sampling distribution of means is normally distributed. This assumption is met when the *N* is at least 30 (Field, 2013; Pallant, 2012). Sphericity is the condition where the variances of the differences between all possible pairs of groups (i.e., levels of the independent variable) are equal (Field, 2013). Since the researcher is using the multivariate statistic of the repeated measures ANOVA, sphericity is not required (Field, 2013; Pallant, 2012). Additionally, the repeated measures ANOVA is a robust test. Meaning that even when violations of normality and homogeneity of variance exist, the model will yield reasonably accurate *p* values (within ± .02 of the true *p* value) when the sample sizes are at least moderate, commonly accepted as at least 30 participants (Boneau, 1960; Schmider, Ziegler, Danay, Beyer, & Buhner, 2010; Wilcox, 2001). Therefore, the repeated measures ANOVA is the appropriate test to conduct even if assumptions are violated. In addition, repeated measures ANOVA (within subject analysis) only use respondents who have no missing data for both the pretest and posttest. One participant had missing data, so that participant

was excluded from those analyses. In addition, when running one-way ANOVA (between subjects analysis), the 1 to 1 match does not matter; therefore, the missing participant's data can be added back in, as long as they have data for the variables used in the between subject analysis.

Data Analysis and Results

RQ1a: Is there a statistically significant difference between pretest and posttest Bystander Efficacy Scale (BES) scores among those in the standard treatment group?

To determine if there were significant differences between pretest and posttest BES scores in the standard treatment group, a repeated measures ANOVA was conducted. The independent variable was time, where the pretest was time one and the posttest was time two. The dependent variable was BES mean scores. Mean BES scores were computed from scores on 19 individual BES items. Scores on the BES ranged from 0 to 100, where 0 was can't do it, 10 was quite uncertain, 50 was moderately certain, and 100 was very certain. The one-way ANOVA was chosen over the dependent samples *t*-test for this analysis because in SPSS the ANOVA produces an effect size measure but does not do so for the dependent samples *t*-test (Field, 2013). The null hypothesis states that there is no significant difference in BES pretest and posttest scores in the standard treatment group.

Results of the repeated measures ANOVA testing the BES hypothesis indicated that there was no significant difference between BES pretest ($M = 80.87$, $SD = 19.50$) and posttest scores ($M = 83.16$, $SD = 22.78$) in the standard treatment group, Wilk's Lambda = .988, $F(1, 24) = .292$, $p = .594$, $\eta^2 = .012$. The eta squared value of .012 revealed that the intervention effect on BES scores was small, accounting for only 1.2% of the

variability in BES scores. Based on Cohen's (1988) effect size standards for eta squared, .01 is a small effect, .06 is a medium effect, and .14 is a large effect. Cohen's *d* was .08, indicating that there was a 3% gain from the pretest to the posttest. Based on the results of the repeated measures ANOVA, the null hypothesis was not rejected. See Tables 3 and 4.

A post-hoc power analysis was conducted. The results indicated that given the small effect size, the statistical power was only .08 versus the desired standard of .80 (Field, 2013; Pallant, 2012). This means that given the sample size of 25 in the standard treatment group and the small effect size of .012, there was only an 8% chance of detecting a significant effect if one actually exists in the real world.

RQ1b: Is there a statistically significant difference between pretest and posttest BES scores among those in the PLUS treatment group?

To determine if there were significant differences between pretest and posttest BES scores, a repeated measures ANOVA was conducted. The independent variable was time, where the pretest was time one and the posttest was time two. The dependent variable was BES scores. Scores on the BES ranged from 0 to 100, where 0 was can't do it, 10 was uncertain, 50 was moderately certain, and 100 was very certain. The null hypothesis states that there is no significant difference in BES pretest and posttest scores in the PLUS treatment group.

Results indicated that for the PLUS intervention group, the BES posttest scores (M = 85.82, SD = 14.30) were significantly higher than pretest scores (M = 77.98, SD = 18.73), Wilk's Lambda = .793, $F(1,24) = 6.265$, $p = .020$, $\eta^2 = .207$, where the PLUS group intervention accounted for 20.7% of the variability BES posttest scores. Cohen's *d*

was .35 or a medium effect size, indicating that there was 14% gain from pretest to posttest scores. Based on the eta squared value of .207, the intervention had a large impact on BES scores. As a result of the repeated measures ANOVA, the null hypothesis was rejected because there was a statistically significant difference (p = .020) between the pretest and posttest scores. See Tables 5 and 6.

RQ2a: Is there a statistically significant difference between pretest and posttest Bystander Attitude Scale Revised (BAS-R) scores among those in the standard treatment group?

To determine if there were significant differences between pretest and posttest BAS-R scores, a repeated measures ANOVA was conducted. The independent variable was time, where the pretest was time one and the posttest was time two. The dependent variable was BAS-R. Scores on the BAS-R ranged from 1 to 5, where 1 was not at all likely and 5 was very likely. The null hypothesis states that there is no significant difference in BAS-R pretest and posttest scores in the standard intervention group.

The results of the repeated measures ANOVA for the standard intervention group testing the BAS-R hypothesis also indicated that there were no significant differences in BAS-R pretest (M = 3.85, SD = .88) and posttest scores (M = 3.84, SD = 1.06) with the standard intervention group, Wilk's Lambda = 1.0, $F(1, 24)$ = .006, p = .939, η^2 = .000, explaining 0.0% of the variability in Standard Group BAS-R posttest scores. The eta squared effect size was small and the null hypothesis was not rejected. Cohen's d was .01, indicating that there was a 0% gain from pretest to posttest scores. A post-hoc power analysis indicated that, given the sample size of 26 in the standard treatment group and the small effect size of η^2 = .000, there was only a 5.1% chance of detecting a significant

Table 3

Bystander Efficacy Scores (BES) Mean Scores: Standard Treatment Group

	N	*M*	*SD*
BES Posttest	25	83.16	22.78
BES Pretest	25	80.87	19.50

Table 4

Bystander Efficacy Scores (BES) One Way ANOVA Table: Standard Treatment Group

Effect	Value	F	Hypothesis *df*	Error *df*	*p*	Cohen's *d*
Wilks' Lambda	.988	.292	1.000	24.00	.594	.08

Table 5

Bystander Efficacy Scores (BES) Mean Scores: PLUS Treatment Group

	N	*M*	*SD*
BES Posttest	25	85.82	14.30
BES Pretest	25	77.98	18.73

Table 6

Bystander Efficacy Scores (BES) One Way ANOVA Table: PLUS Treatment Group

Effect	Value	*F*	Hypothesis *df*	Error *df*	*p*	Cohen's *d*
Wilks' Lambda	.793	6.265	1.000	24.000	.020	.35

effect, if one actually exists in the real world. See Tables 7 and 8.

RQ2b: Is there a statistically significant difference between pretest and posttest BAS-R scores among those in the PLUS treatment group?

To determine if there were significant differences between pretest and posttest BAS-R scores, a repeated measures ANOVA was conducted. The independent variable was time, where the pretest was time one and the posttest was time two. The dependent variable was BAS-R scores. The dependent variable for the second analysis was scores on the BAS-R. Scores on the BAS-R ranged from 1 to 5, where 1 was not at all likely and 5 was very likely. The null hypothesis states that there is no significant difference in BAS-R pretest and posttest scores in the PLUS intervention group

There was also a statistically significant increase in BAS-R scores from the pretest ($M = 3.92$, $SD = .77$) to the posttest ($M = 4.23$, $SD = .52$) among PLUS treatment group, Wilk's Lambda = .773, $F(1, 24) = 7.065$, $p = .014$, $\eta^2 = .227$, accounting for 22.7% of the variability in BAS-R posttest scores for the PLUS treatment group, where the intervention had a medium effect on BAS-R scores. Cohen's d was .36, indicating that there was a 14% gain from pretest to posttest. As a result, the null hypothesis was rejected because there was a statistically significant difference ($p = .014$) between the pretest and posttest scores. See Tables 9 and 10.

RQ3: Is there a statistically significant difference in the change in BAS-R scores from pretest to posttest between the standard and PLUS treatment groups?

A one-way ANOVA was conducted to determine if there was a significant difference in change in BAS-R scores from pretest to posttest between the standard and PLUS treatment groups. The independent variable is treatment group where 1 was the

Table 7

Bystander Attitude Scores (BAS-R) Mean Scores: Standard Treatment Group

	N	*M*	*SD*
BAS-R Posttest	25	3.84	1.06
BAS-R Pretest	25	3.85	0.88

Table 8

Bystander Attitude Scores (BAS-R) ANOVA Table: Standard Treatment Group

Effect	Value	*F*	Hypothesis *df*	Error *df*	*p*	Cohen's *d*
Wilks' Lambda	1.000	.006	1.000	24.000	.939	.01

Table 9

Bystander Attitude Scores (BAS-R) Mean Scores: PLUS Treatment Group

	N	*M*	*SD*
BAS-R Posttest	25	4.23	.52
BAS-R Pretest	25	3.92	.77

Table 10

Bystander Attitude Scores (BAS-R) ANOVA Table: Standard Treatment Group

Effect	Value	*F*	Hypothesis *df*	Error *df*	*p*	Cohen's *d*
Wilks' Lambda	.773	7.065	1.000	24.000	.014	.36

standard group and 2 was the PLUS group. The dependent variable, BAS-R difference scores, was calculated by subtracting BAS-R posttest scores from BAS-R pretest scores. According to Tabachnick and Fidell, (2012), given the stringent limitations to the ANCOVA and potential ambiguity in interpreting results, differences between the pretest and posttest measures can be computed for each respondent and used as the dependent variable in ANOVA as a way of controlling for pretest scores. The null hypothesis states that there is no significant difference in BAS-R difference scores from the pretest to the posttest.

Results of the ANOVA indicated that there was no significant difference in BAS-R difference scores from pretest to posttest scores between the standard treatment group (M = 2.29, SD = 21.18) and the PLUS intervention group (M = 7.97, SD = 15.37), $F(1, 49) = 1.21$, $p = .277$ $\eta^2 = .024$, accounting for 2.4% of the variability in BAS-R difference scores between the Standard and PLUS intervention groups. Cohen's d was .41, indicating that there was 16% gain in scores from the standard intervention to the PLUS intervention group. As a result, the null hypothesis was not rejected. Post-hoc power analysis revealed that the statistical power was only .190 (19% likelihood of detecting a significant effect if one actually exists in the real world), given the sample size of 51 and the small effect size of $\eta^2 = .024$. See Tables 11 and 12.

RQ4a: Is there a statistically significant difference in pretest and posttest Illinois Rape Myth Acceptance Scale (IRMAS) scores among those in the standard treatment group?

To examine if there are statistically significant differences in pretest and posttest IRMAS scores within the standard treatment group, a repeated measures ANOVA was

conducted. The independent variable is time, where time 1 was the pretest and time 2 was the posttest. The dependent variable was IRMAS mean scores calculated from 22 individual IRMAS question items. The IRMAS scores range from 1 to 5, where 1 was strongly agree and 5 was strongly disagree. The null hypothesis states that there is no significant difference in pretest and posttest IRMAS scores within the standard treatment group.

Results indicated that there was no significant difference in IRMAS pretest (M = 1.97, SD = .86) and posttest (M = 1.87, SD = 99), Wilk's Lambda = .973, $F(1, 24) = .627$, $p = .420$, $\eta^2 = .027$, accounting for 2.7% of the variability in IRMAS posttest scores, indicating that the effect was small. Cohen's d was .12, indicating that there was 5% gain in scores from IRMAS pretest to posttest. As a result of the repeated measures ANOVA, the null hypothesis was not rejected. The post-hoc power analysis indicated that the power value was .124, indicating a 12.4% chance of detecting a significant effect if one exists in the real world. See Tables 13 and 14.

RQ4b: Is there a statistically significant difference in pretest and posttest IRMAS scores among those in the PLUS treatment group?

To examine if there are statistically significant differences in pretest and posttest IRMAS scores within the PLUS treatment group, a repeated measures ANOVA was conducted. The independent variable is time, where time 1 was the pretest and time 2 was the posttest. The dependent variable was IRMAS mean scores. The null hypothesis states that there is no significant difference in pretest and posttest IRMAS scores within the PLUS treatment group.

Results indicated that there was no significant difference in IRMAS pretest (M =

Table 11

Bystander Attitude Scores (BAS-R) Pretest and Posttest Mean Scores

Group		*N*	*M*	*SD*
Standard Intervention	BASR Pretest	25	3.8494	0.87915
	BASR Posttest	25	3.8358	1.06075
PLUS Intervention	BASR Pretest	26	3.9433	0.76545
	BASR Posttest	26	4.2314	0.50638

Table 12

Bystander Attitude Scores (BAS-R) Pretest-Posttest Differences ANOVA Table

Source	*SS*	*df*	*MS*	*F*	*p*	Cohen's *d*
Corrected Model	410.633	1	410.633	1.207	.277	.41
Intercept	1340.063	1	1340.063	3.938	.053	
Group	410.633	1	410.633	1.207	.277	.41
Error	16672.716	49	340.260			
Total	18453.187	51				
Corrected Total	17083.349	50				

Table 13

Illinois Rape Myth Acceptance Scale (IRMAS) Mean Scores: Standard Treatment Group

	N	*Mean*	*SD*
IRMAS Posttest Mean Scores	25	1.87	.99
IRMAS Pretest Mean Scores	25	1.97	.86

Table 14

Illinois Rape Myth Acceptance Scale (IRMAS) ANOVA Table:

Standard Treatment Group

Effect	Value	*F*	Hypothesis *df*	Error *df*	*p*	Cohen's *d*
Wilks' Lambda	.973	.672	1.000	24.000	.420	.12

1.85, *SD* = .85) and posttest (*M* = 1.65, *SD* = .60), Wilk's Lambda = .933, $F(1, 24) = .936$, $p = .213$, $\eta^2 = .064$, explaining 6.4% of the variability in IRMAS scores, indicating that the effect was small. Cohen's *d* was .21, indicating that there was 8% gain in scores from IRIMAS pretest to posttest. As a result of the repeated measures ANOVA, the null hypothesis was not rejected. The post-hoc power analysis indicated that the power value was .213, indicating a 21.3% chance of detecting a significant effect if one exists in the real world. See Tables 15 and 16.

Gender Sub-Group Analysis

A subsequent analysis was conducted to determine if there was a statistically significant difference in the change in BAS-R scores between males and females. As can be seen in Table 16, women had much higher BAS-R scores at pretest than the men did. A one-way ANOVA was conducted to evaluate this question. The dependent variable was BAS-R change scores from pretest to posttest, while the independent variable was gender where the categories were male and female.

Results of the ANOVA indicated that there was no statistically significant difference in change in BAS-R scores between males (*M* = .142, *SD* = 1.02) and females (*M* =.139, *SD* = .30), $F(1, 49) = .000$, $p = .989$ $\eta^2 = .00$, equating to 0.0% of explained variance. Cohen's *d* was .004, indicating that there was 0% difference in BAS-R scores between males and females. The post-hoc power analysis indicated that statistical power for this analysis was .05 (5% chance of detecting a significant effect if one actually exists). As a result of the ANOVA, the null hypothesis was not rejected. See Table 17 and 18. Both genders improved very little, but about equally even; however, the men by far had more room for improvement.

Table 15

Illinois Rape Myth Acceptance Scale (IRMAS) Mean Scores: PLUS Treatment Group

	N	*M*	*SD*
IRMAS Posttest Mean Scores	25	1.65	.60
IRMAS Pretest Mean Scores	25	1.85	.85

Table 16

Illinois Rape Myth Acceptance Scale (IRMAS) ANOVA Table: PLUS Treatment Group

Effect	Value	*F*	Hypothesis *df*	Error *df*	*p*	Cohen's *d*
Wilks' Lambda	.936	1.640	1.000	24.000	.213	.21

Table 17

Bystander Attitude Scores (BAS-R) Pretest and Posttest Mean Scores by Gender

What is your gender		*N*	*M*	*SD*
Female	BASR Pretest	25	4.157	0.453
	BASR Posttest	25	4.295	0.435
Male	BASR Pretest	26	3.648	1.001
	BASR Posttest	26	3.789	1.051

Table 18

Bystander Attitude Scores (BAS-R) ANOVA Table: Gender

Source	*SS*	*df*	*MS*	*F*	*p*	Cohen's *d*
Corrected Model	0.000	1	0.000	0.000	.989	
Intercept	1.002	1	1.002	1.751	.192	
gender	0.000	1	0.000	0.000	.989	.004
Error	28.040	49	0.572			
Total	29.044	51				
Corrected Total	28.041	50				

CHAPTER 5

DISCUSSION

In this randomized controlled trial (Campbell & Stanley, 1963), I examined the efficacy of the 2015 standard SAPP program and the standard PLUS program to see if they improved bystander willingness to intervene and bystander attitudes, as well as participant's reduction in rape myth acceptance stereotypes, with college students as study participants. For the enhanced version, the PLUS program content was added to increase participants' motivation to intervene as a bystander. First, I summarize the key findings of the study. Then, I will discuss the strengths and limitations of the study and summarize the implications of this project for military SAPPs in terms of research, practice, and policy.

Summary of Findings

The standard program did not have a statistically significant impact on moving people's attitudes or confidence toward intervening as a bystander or dispelling commonly held rape myths, such as "If a women wears revealing clothing she is asking for trouble" or "If a woman goes into a room with a man, she is agreeing to sex." The lack of effectiveness of the SAPP is problematic because it is designed to instill a climate of willingness to help interrupt and prevent possible sexual assaults among bystanders in the military. In the study, the SAPP did not shift participants' willingness to endorse

items, suggesting they would step in to interrupt a possible sexual assault or engage in such a manner that would lower the risk for a sexual assault. Further, the SAPP did not meaningfully shift participants' problematic perspectives about sexual assault, meaning commonly held rape myths did not significantly decrease. While the present study focused on college students (64.1% student veterans or ROTC cadets), the results could be especially troubling if they generalize to military settings, since the military relies on this SAPP to reduce sexual assaults.

In the past few years, the USAF has emphasized the need to protect members from sexual assault. However, it appears as though the USAF is using a one-pronged approach, the current SAPP training. Based on the current study, there is doubt that this program is effective. If the USAF is serious about protecting its members from sexual assault, more needs to be done. Assuming the results from the present study would generalize, and this is an assumption, the current program wastes resources of time, money, and energy and may create a false sense of achievement. While USAF leaders may applaud the fact that they are doing something, the question of whether the efforts are helpful needs to be fully explored before leaders should feel comfortable with the efforts being advanced to slow sexual assault within the USAF. A high level of attention is focused on sexual assault by the media, Congress, the Secretary of the Defense (DoD, 2014), and senior Air Force leaders. Government estimates state that over 20,000 sexual assaults occur each year, with only approximately 10% ever reported, even though reporting is believed to be on the rise (DoD, 2014). Continuing to implement a program with no basis in evidence and no positive results seems counter to the stated goals for combatting this issue.

The present study did reveal some promising results. Specifically, the addition of a relatively short exercise, about 15 minutes, led to a statistically significant gain on both bystander willingness to intervene and bystander attitudes scores (see Appendix B) for the PLUS group. The PLUS treatment included 10 questions that followed the spirit of motivational interviewing (Miller & Rollnick, 2013) to elicit intrinsic motivation to change behaviors (see Appendix A). For example, participants in the PLUS program were asked, "How do you think you would feel if you were present during a potential sexual assault and failed to act or intervene as a bystander and a sexual assault occurred?" and "If you did act and intervened as a bystander, how do you think you would feel if it helped a potential victim not get victimized?" The PLUS questions were aimed at promoting participants' internalization of the training content by self "change-talk" that is believed to lead to higher motivation to act in a more prosocial manner (Miller & Rollnick, 2013).

Whereas the standard treatment did not result in desired gains, the PLUS showed significant change that the standard training did not. The effect size suggests a 14% advantage, meaning there is a 14% higher likelihood that people would act to prevent a sexual assault from happening by doing such things as walking someone home from a party who appeared to have had too much to drink or confronting a friend who bragged about having sex with someone that was unable to consent. If we were to extrapolate the current findings to the military, this 14% advantage would be tremendous. The USAF has roughly 645,000 personnel, and if 14% of these individuals were more willing to engage as a bystander to prevent or thwart a sexual assault, it would translate to about 90,000 people who would now potentially be more likely to intervene as a bystander. What

might this look like? Based on the items from the BES, bystanders may be more likely to "call for help if they hear someone yelling for help" or "do something to help a very drunk person who is being brought up to a bedroom by a group of people at a party" (see Appendix B).

Regarding bystander attitude results, the study revealed that those in the PLUS group also showed a moderate improvement (about 14%) in prosocial bystander attitudes, while those in the standard group did not. Examples of positive changes in this measure include participants reporting more confidence to confront a friend if they hear rumors that they had forced someone to have sex, to be able and willing to express concern if they heard a friend making sexist jokes, or to confront a friend who is hooking up with someone who has passed out. While reporting being more confident is a positive sign, questions remain whether this would translate into corresponding behavior change.

On the rape myths outcome, neither the standard nor PLUS group produced significant results, wherein participants were less likely to endorse dangerous myths about sexual assault (see Table 14). It is possible that the lack of significant finds came from not having sufficient power to detect the difference, or the SAPP programs may need to alter how they attempt to shift attitudes on rape myths by presenting the information in a different manner. It is possible that participants already held relatively low levels of rape myths, with not much margin for change. Lastly, I also explored whether gender played a role in shifting attitudes on sexual assault. No gender differences were found.

Study Strengths

There are several strengths of this study. The first and most important strength of this study is that it is the first of its kind to explore the efficacy of a military sexual assault prevention program using a rigorous design, albeit with a civilian study population. Despite over 10 years of prevention training, the Air Force and the DoD have not yet undertaken a study of this type nor has any of the content of any of the military SAPPs been tested in rigorous, experimental studies identified in the literature. This study lays the foundation of a research agenda that could pave the way for future experimental studies comparing sexual assault prevention programs across all five military branches in an effort to create a "best of breed" SAPP for implementation across the DoD. By utilizing the same content of a current Air Force SAPP and using professional, highly skilled trainers, this study closely replicates the training in a similar manner.

Another strength is the study design. Using a matched pair randomized controlled experimental design reduced a number of threats to internal validity that are found in less rigorous designs. The fact that each intervention group received the pretest via email approximately 1 week prior to training and were then assigned to groups further reduced threats to internal validity. In addition, the training for both groups was conducted at the same time in two different locations, with no chance of contamination between groups, as there were monitors assigned to each group to ensure no communication occurred between members of the two groups. The posttest surveys were completed directly after the training session, which further reduced the likelihood of conversations between group members that could have affected the study results.

Other strengths of the study were the results of the PLUS intervention in

affirming the value of MI techniques to promote change, since the PLUS group was the only group with demonstrated improvements in the outcome areas. The small group process used in the PLUS intervention may sufficiently lead to motivational changes for increased bystander efficacy and more prosocial bystander attitudes geared towards preventing sexual assault (see Appendix B). The possible addition of 10 MI questions could prove valuable, such as "How do you think you would feel if you were present during a potential sexual assault and failed to act or intervene as a bystander and a sexual assault occurred?" or "If you did act and intervene as a bystander, how do you think you would feel if it helped a potential victim not get victimized?" Presenting these questions along with the short 10 to 15 minute small group discussions at the end of the PLUS training would be a very cost effective and manageable component to add to the standard training across the Air Force. However, it is important to recognize that group participation is not for every person; some individuals may be unwilling to join in or self-disclose regarding attitudes and beliefs or to share distressing experiences, particularly if they have been victims or perpetrators of sexual violence.

Study Limitations

As with any study, there are several limitations despite the rigorous experimental design. The first potential threat to internal validity is the selection of the study sample. The sample for this dissertation was university students who self-selected and voluntarily enrolled in the project. The very nature of self-selection may mean that those who are less likely to perpetrate sexual violence may have enrolled in the study, leaving out potentially higher risk students and, more importantly, those who may have perpetrated sexual violence and could realize benefits in attending such training. Further, the present

study was conducted on a university campus and may not generalize to the military setting. The second threat to internal validity relates to instrumentation and the actual procedures of the training session of the two groups. Professional Air Force trainers conducted the training sessions for each group; however, there is always the chance that trainers in one group differed slightly in small ways in the administration of the training. For example, while facilitators for both groups used training guides, they may have differed regarding the examples they used to emphasize key points during the session. They also may have answered questions from the participants in one group that were never brought up in the other group, hence creating slight difference in content. Lastly, the proficiency, enthusiasm, and rapport with the participants may have led to small difference in the groups. Despite these potential threats to internal validity, this method of training is the standard protocol for Air Force SAPP training and, as such, does not pose a significant threat to the study findings. In addition, while attitudes and willingness to intervene as a bystander measures were used, no behavioral measures were used to see if participants actually intervened.

Potential threats to external validity are other limitations for this study and, in particular, population validity. This threat deals with how representative the study sample is to the population writ large. In this case, I attempted to minimize this threat to external validity by recruiting heavily from the population that most closely resembles the broader population of interest, namely student veterans and ROTC students. Sixty-four percent of the study participants were either student veterans (56.4%) or ROTC cadets (7.7%). Although student veterans and ROTC cadets do not mirror the larger military population entirely, they are much more closely aligned with that larger population than those of the

general student population. The SAPP training is a program that is administered to active duty military, but also to guard, reserve, and civilian personnel in the Department of the Air Force. Therefore, the fact this study relied on college students as participants may not be a significant limitation for a pilot study on SAPP efficacy. That said, findings from this sample might have some concerns with generalizability, which is a threat to external validity; therefore, future studies should be conducted with Department of the Air Force personnel.

In addition to utilizing college students for this study, another potential limitation is the fact that this study was conducted in the intermountain west area of the United States. Although every attempt was made to create a diverse sample, the population is from a somewhat less than diverse geographic region, with a strong religious influence, which may also be a threat to generalizability, as the results from this study location may not generalize to other cities or regions of the country where the military population could vastly differ. Nonetheless, results from this study can be used as pilot data and the initial starting point for studies of this nature utilizing active duty military participants. Another limitation of this study, as in any study using surveys, is the issue of the validity of participants' responses. In essence, the manner in which participants answered the questions at posttest may have been influenced by what they perceived to be the desired response of the researcher and not what they actually believed.

Implications for Practice

This study revealed the lack of impact regarding the standard training implemented across the entire Air Force. While this may seem to answer the mandate to implement prevention programs to reduce sexual assault, the fact is that it is apparently

falling short of any benefit, if the findings generalize to the military. Since the goal of the SAPP training is connected to key areas of concern to social work (i.e., preventing abuse/trauma, health and mental health issues, and also promoting community), sexual assault prevention training must be effective or, at the very least, not iatrogenic, as some components currently seem to be.

However, by adding a short, succinct MI component to the standard SAPP training, significant benefits that tie directly to desired outcomes of the Air Force SAPP training could be realized. With the inclusion of a small but effective MI module to SAPP training, the Air Force may realize a significant increase in airmen's willingness to intervene as a bystander in sexual assault environments. Not only is an MI component readily adaptable to military SAPPs, an MI module could also be incorporated and tested in junior high, high school, and college sexual assault prevention programs for very little cost. The impact of implementing such a component could result in thousands of people more willing to intervene in situations leading to a potential sexual assault.

Implications for Policy

This study has implications for the entire spectrum of the social ecological model (SEM) that the Air Force SAPP espouses to embrace, but in reality falls far short of. Rather than employ prevention components at each of the four levels of SEM, the current SAPP program is firmly rooted in the very first level, namely the individual level. There is no content that relates to any of the three other levels of SEM—relationship, community, or societal levels (DoD, 2014). The Air Force has access to the literature that describes each of these missing levels, along with examples of how to implement each of those levels into their SAPP training. All that is needed is to apply those components into

the next iteration of their training and then begin a continuous process of program evaluation to refine their program based on the results of those evaluations. This is particularly necessary in a male-dominated organization that promotes and trains the use of violence as a means to achieve national objectives.

Since well over a half a million personnel are mandated to receive SAPP training on an annual basis, and since this study indicates no aspect of the standard training shows any efficacy, there is no value in propagating the training as it currently exists, if the results generalize. This fact, along with the findings from a content analysis of Air Force SAPP training (Gedney et al., 2015), provides further evidence that major changes to the curriculum are in order. Many of the components regarding best practices for prevention (De Gue et al., 2014) are conspicuously missing from the current Air Force SAPP.

The results of this study, in concert with findings from best practices, should be used to revamp the present SAPP to more closely align with key characteristics of what is known to work in prevention, as previously discussed in detail in the literature review. A few of those concepts include single-gender training sessions; booster sessions to supplement the current one-hour large group training session; comprehensive approaches to reach not only individuals, but also community and societal levels according to the SEM; theory-driven content; and systematic outcome evaluations.

Implications for Research

Future research regarding the Air Force SAPP should address incorporation of additional components of best practices for prevention, as mentioned, and in addition, longer follow-up time (6 months to 2 years) is desirable to ascertain whether the positive results have any lasting effects. Research indicates studies that include longer follow-up

times are better positioned to report on the efficacy than studies with only one short-term follow-up posttest. Future studies could also attempt to isolate components to see which ones prove most beneficial. Follow-on studies should also be conducted with active duty, guard, and reserve Air Force personnel to determine the efficacy of the training on the specific population for which the training was designed.

In addition, the Air Force SAPP should be evaluated against other SAPPs that are seen as promising. This may lead to further refinement and subsequent improvements to both the military and civilian prevention programs. Future studies should include mixed methods to gain a deeper and more robust understanding of how the training is received and how it could be adjusted to create an even more effective program. This could include interviews with not only victims of military sexual assault, but also with convicted perpetrators, to better understand what was behind their criminal actions. Lastly, creating enduring partnerships between military installations and academia is needed and has even been directed by the Secretary of Defense in a memorandum signed in May 2014 (DoD, 2014), but has yet to be realized on a large-scale basis.

I also considered the aspect of motivational interviewing (MI) for use in this study (Miller & Rollnick, 2013) and added an MI component based on key MI concepts for the PLUS group. The findings of the study, specifically the successful results of the PLUS intervention outcomes in several areas, proved the benefit from this MI component. The clinical improvement in the PLUS group scores provides affirmation of MI with respect to promoting the internalization of motivation to act and how self "change talk" supports the client's reasons for behavior change as an integral component of behavior change therapy (Moyers & Martin, 2006). As such, the guiding principle of MI is that when

clients verbalize their own reasons or motivation for change, real change often occurs. Further, this change can occur with brief, targeted interventions, such as the intervention used in this study (Miller & Rose, 2009).

Conclusion

This RCT evaluated the efficacy of the standard Air Force 2015 sexual assault prevention program compared to the same 2015 program with an additional component designed to motivate willingness to intervene as a bystander (PLUS program). Implementing this study as an RCT minimized threats to internal validity. Specifically, in this type of design, history, maturation, statistical regression, and temporal causation are controlled for in the randomization process. Key attention to randomization and blinding of participants, facilitators, and study participants to treatment condition reduced potential for selection bias, as well as minimized alternative explanations of effect. Utilizing four highly skilled Air Force facilitators and ensuring adherence to the SAPP training curriculum optimized study quality. Using high-quality facilitators for both the standard and PLUS groups resulted in a virtually unambiguous independent variable and interventions that are extremely precise and highly replicable.

Participants receiving the PLUS training demonstrated higher treatment response than participants receiving the standard training in several outcome areas. The PLUS participants realized clinically significant improvements in bystander efficacy and bystander attitudes, holding promise for incorporating this small MI component into the next iteration of Air Force SAPP training. The results of this study lay the foundation as pilot data in support of future research conducted with military personnel. The MI component brings the advantages of low cost and easy implementation across the Air

Force. This study provides the initial understanding of the efficacy of one of the military branch's efforts in combatting the huge and far-reaching issue of military sexual assault and begs further exploration and curriculum development, as well as the implementation of a continuous process improvement and systematic program evaluation process for the entire DoD. Lastly, while the effect sizes for the statistically significant outcome measures were relatively small, even small effects would be beneficial when considering this training would reach in excess of half a million Air Force personnel annually.

APPENDIX A

PLUS COMPONENT

PLUS Component

At the conclusion of the standard training, participants in the PLUS group were instructed to read and ponder the following questions individually for approximately 5 minutes. Participants were then asked to get into groups of 2-3 and discuss their responses to these questions for an additional 10 minutes.

1. How do you think you would feel if you were present during a potential sexual assault and failed to act or intervene as a bystander and a sexual assault occurred?
2. If you did act and intervened as a bystander, how do you think you would feel if it helped a potential victim not get victimized?
3. What benefits would come to you personally by acting as a bystander to promote the safety of another citizen?
4. What benefits would come to **society** if you personally acted as a bystander to promote the safety of another citizen?
5. What might be some undesired consequences of not acting as a bystander?
6. Do you have personal experience in a situation that you perceived to be a potential situation that could have led to a sexual assault?
7. Did you act?
8. Why or why not?
9. How do you think you would feel 20 years from now if you had had the opportunity to act in a situation of a potential sexual assault and failed to act?
10. Has your view of "rape myths" changes as a result of this training?

APPENDIX B

DEMOGRAPHICS

Demographics

1. Age (in years)
2. Sex (M, F, Intersex)
3. Ethnicity (White/African American/Asian-Pacific Islander/Hispanic or Latino/Native American/Other – fill in)
4. Year in school (Freshman/Sophomore/Junior/Senior/Graduate Student)
5. Household Composition (Single, never married, married or domestic partnership, widowed, divorced, separated)
6. Employment Status (full time, part time, not employed, retired)
7. Household Occupants (including yourself, how many people live in your household? (fill in number)
8. Religious Preference (Muslim, Catholic, Protestant, LDS, Jewish, Buddhist, Agnostic, Atheist, Other – fill in)
9. Household Income (under $20,000, $20,000-$40,000, $40,000-$60,000, over $60,000)
10. Campus Affiliation (Fraternity, Sorority, Sports Team, Band, ROTC, Student Veteran, Other-fill in)
11. Political Views (Very conservative, conservative, moderate, liberal, very liberal)

APPENDIX C

UPDATED ILLINOIS RAPE MYTH ACCEPTANCE SCALE – SHORT FORM

Updated Illinois Rape Myth Acceptance Scale – Short Form

For each question, please indicate how strongly you agree or disagree with the statement using the following scale:

1 – Strongly agree 2 – Agree 3 – Neither agree or disagree 4 – Disagree

5 – Strongly disagree

Subscale 1: She asked for it

1. If a girl is raped while she is drunk, she is at least somewhat responsible for letting things get out of hand. 1 2 3 4 5

2. When girls go to parties wearing slutty clothes, they are asking for trouble.
1 2 3 4 5

3. If a girl goes to a room alone with a guy at a party, it is her own fault if she is raped.
1 2 3 4 5

4. If a girl acts like a slut, eventually she is going to get into trouble.
1 2 3 4 5

5. When girls get raped, it's often because the way they said "no" was unclear.
1 2 3 4 5

6. If a girl initiates kissing or hooking up, she should not be surprised if a guy assumes she wants to have sex. 1 2 3 4 5

Subscale 2: He didn't mean to

7. When guys rape, it is usually because of their strong desire for sex.
1 2 3 4 5

8. Guys don't usually intend to force sex on a girl, but sometimes they get too sexually carried away.
1 2 3 4 5

9. Rape happens when a guy's sex drive goes out of control.
1 2 3 4 5

10. If a guy is drunk, he might rape someone unintentionally.
1 2 3 4 5

11. It shouldn't be considered rape if a guy is drunk and didn't realize what he was doing.
1 2 3 4 5

12. If both people are drunk, it can't be rape.
1 2 3 4 5

Subscale 3: It wasn't really rape

13. If a girl doesn't physically resist sex—even if protesting verbally—it can't be considered rape.
1 2 3 4 5

14. If a girl doesn't physically fight back, you can't really say it was rape.
1 2 3 4 5

15. A rape probably doesn't happen if a girl doesn't have any bruises or marks.
1 2 3 4 5

16. If the accused "rapist" doesn't have a weapon, you really can't call it rape.
1 2 3 4 5

17. If a girl doesn't say "no" she can't claim rape.
1 2 3 4 5

Subscale 4: She lied

18. A lot of times, girls who say they were raped agreed to have sex and then regret it.
1 2 3 4 5

19. Rape accusations are often used as a way of getting back at guys.
1 2 3 4 5

20. A lot of times, girls who say they were raped often led the guy on and then had regrets.
1 2 3 4 5

21. A lot of times, girls who claim they were raped have emotional problems.
1 2 3 4 5

22. Girls who are caught cheating on their boyfriends sometimes claim it was rape.
1 2 3 4 5

Scoring: Scores range from 1 (strongly agree) to 5 (strongly disagree).
Scores may be totaled for a cumulative score.
Higher scores indicate greater rejection of rape myths.
(McMahon & Farmer, 2011; Payne, Lonsway, & Fitzgerald, 1999)

APPENDIX D

BYSTANDER EFFICACY SCALE

Bystander Efficacy Scale

Please read each of the following behaviors. Indicate in the column *Confidence* how confident you are that you could do them. Rate your degree of confidence by recording a whole number from 0 to 100 using the scale given below:

0	10	20	30	40	50	60	70	80	90	100
can't do	quite uncertain				moderately certain					very certain

		Confidence
1.	Express discomfort/concern if someone makes a joke about a woman's body or about gays/lesbians or someone of a different race.	%
2.	Express my discomfort if someone says that rape victims are to blame for being raped.	%
3.	Call for help (i.e. call 911) if I hear someone in my dorm or apartment yelling "help."	%
4.	Talk to a friend who I suspect is in an abusive relationship.	%
5.	Get help and resources for a friend who tells me they have been raped.	%
6.	Able to ask a stranger who looks very upset at a party if they are ok or need help.	%
7.	Ask a friend if they need to be walked home from a party.	%
8.	Ask a stranger if they need to be walked home from a party.	%
9.	Speak up in class if a professor is providing misinformation about sexual assault.	%
10.	Criticize a friend who tells me that they had sex with someone who was passed out or who didn't give consent	%
11.	Do something to help a very drunk person who is being brought upstairs to a bedroom by a group of people at a party.	%

12.	Do something if I see a woman surrounded by a group of men at a party who looks very uncomfortable.	%
13.	Get help if I hear of an abusive relationship in my dorm or apartment.	%
14.	Tell an RA or other campus or community authority about information I have that might help in a sexual assault case even if pressured by my peers to stay silent.	%
15.	Speak up to someone who is making excuses for forcing someone to have sex with them.	%
16.	Speak up to someone who is making excuses for having sex with someone who is unable to give full consent.	%
17.	Speak up to someone who is making excuses for using physical force in a relationship.	%
18.	Speak up to someone who is calling their partner names or swearing at them.	%

APPENDIX E

ATTITUDES TOWARD DATE RAPE SCALE

Attitudes Toward Date Rape Scale (ATDRS)

(1=strongly disagree 2=disagree 3=undecided 4=agree 5=strongly agree)

1. There is a problem with date rape in our society
2. Many women falsely claim they have been raped on a date
3. Rape education/information programs make it seem like all women have little responsibility/control in a date rape situation
4. If women are cautious enough they can nearly eliminate date rape
5. Men have primary responsibility for reducing the incidence of rape
6. Many women claim they have been raped on a date to get attention or revenge
7. Many charges of date rape are false and unfounded
8. Social humiliation prevents many women from ever reporting rape
9. The number of women raped by dates or male acquaintances is greatly exaggerated in our society
10. Only a small percentage of reported date rapes are false reports
11. The only solution to date rape is self-awareness and or self control
12. Date rape is not rare in our society
13. In many rape education programs all males are assumed to be potential rapists
14. It is a male attitude that must change to eliminate date rape
15. Even women who have experienced consenting alcohol-induced sexual activity are very unlikely to claim it was date rape
16. Rape education programs do not suggest that most males will rape in some circumstances
17. Women today are pressured by feminist groups to label consenting cheap seductions or sex they regret as rape
18. Date rape education programs raise and address a gender related issue in a fair manner
19. Sexual relationships are naturally manipulative and self-serving
20. Men today feel increasingly vulnerable to false accusations of rape

The questionnaire was designed to assess the extent to which undergraduate college students accept the rape myths and prevention program biases cited by date rape backlash critics. The 20-item Attitudes Toward Date Rape Scale (ATDRS) questionnaire contains 9 negatively and 9 positively phrased scored statements about date rape and date rape victims, 2 non-scored attitudinal statements, and 11 demographic and attitudinal variables. The instrument assessed student attitude toward four major tenets of the date

rape backlash literature: victim credibility/ motivation, gender responsibility for date rape prevention, exaggeration of date rape statistics, and anti-male rape education bias.

The ATDRS questionnaire proved to be unidimensional using factor analysis with varimax rotation. Internal reliability was established by a Cronbach alpha of .91 for the measure. The four subscales were all significantly intercorrelated, with Pearson correlations that ranged from $r = .65$ to $r = .74$ on all subscales.

Scores on the instrument could range from 18-90, with higher scores indicating agreement with rape myth/date rape backlash (positively scored items were coded strongly agree = 5, agree = 4, undecided = 3, disagree = 2, strongly disagree = 1).

APPENDIX F

BYSTANDER ATTITUDES SCALE – REVISED

Bystander Attitudes Scale – Revised (BAS-R)

Citation: McMahon, S., Allen, C. T., Postmus, J. L., McMahon, S. M., Peterson, N. A., & Lowe Hoffman, M. (2014). Measuring bystander attitudes and behavior to prevent sexual violence. *Journal of American College Health, 62*(1), 58-66.

Response options: All items on the BAS-R are provided with the response potions on a Likert Scale from 1 (not at all likely) to 5 (very likely),
For each item "Have you done this in the past year?"

Items from the Modified BAS-R

1. Use the words "ho," "bitch" or "slut" to describe girls when I was with my friends.
2. Confront a friend who plans to give someone alcohol to get sex.
3. Confront a friend if I hear rumors that they had forced someone to have sex.
4. Check in with a friend who looks drunk when *she* goes to a room with someone else at a party.
5. Say something to a friend who is taking a drunk *girl* back to *his* room at a party.
6. Confront a *male* friend who is hooking up with someone who has passed out.
7. *Express concern* if a friend makes a sexist joke.
8. Report a friend *to the police if I heard rumors that they had forced someone to have sex.*
9. View pornography online, on DVDs, or in a magazine.
10. Challenge a friend who says that rape victims are usually to blame for being raped.
11. Call for help (i.e., call 911) if I saw a group of guys bothering a girl in the parking lot.
12. Call for help if I saw a girl that I do not know go to her dorm room with a group of guys and hear her yelling for help.
13. Tell an RA or other campus authority about information I might have about a rape case even if pressured by my peers to stay silent.
14. Go with a female friend to the police department if she says she was raped.
15. Go with a male friend to the police department if he says he was raped.
16. Visit a Web site to learn more about sexual violence.

17. Join an organization that works to stop rape and abuse.
18. Participate in a rally on campus to stop rape and abuse.
19. Take a class to learn more about sexual violence and abuse.

APPENDIX G

DATING VIOLENCE SCALE (MODIFIED)

Dating Violence Scale (Modified)

The Dating Violence Scale (Modified): This scale was developed by Shen (2008) to assess experiences of dating violence based on previous studies by Huang & Wang (2005), O'Keef (1998) and Straus (1979) Reitzel-Jaffe, Wekerle, Grasley & Straatman (2001) modified from 17 items that assessed psychological, physical and sexual aggression to an 8 item scale that assess sexual violence only. Cronbach's alpha for this modified scale is .97. These questions are prompted by "When we have conflicts…" Higher scores indicate a higher level of sexual interpersonal violence.

Y = (1) and N = (0).

1. My partner touched my body in an unwanted way	Y N
2. My partner used force to make me have sex	Y N
3. My partner made me have sex without using a condom	Y N
4. My partner threatened to show naked pictures of me	Y N
5. I touched his/her body in an unwanted way	Y N
6. I used force to make him/her have sex with me	Y N
7. I made him/her have sex without using a condom	Y N
8. I threatened to show naked pictures of my partner	Y N

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